```
September 30, 2004, 00:10:29; Search time 14317 Seconds (without alignments) 11703.860 Million cell updates/sec
                                                                                                                                             US-10-081-119-13
3866
1 ggaattoctttttttttt.....aagttttgtgggctaaaatga 3866
                                                                                                                                                                                                                                                                                    6940544
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                   3470272 segs, 21671516995 residues
                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                         IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_htgo_mus:*
em_htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_sy:-
em_htgo_hum:*
                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                      gb ba: *

gb ntg: *

gb ow: *

gb ov: *

gb ba: *

gb bl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ba:*
fun:
hum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 or
                                                                                                                                                                                                                                                                                                                                                                                                                      GenEmbl:*
                                                                                                                                                Title:
Perfect score:
Sequence:
                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                      Searched:
                                                                                        Run on:
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Sequence Seq	AC06.036 Homo sapi AL139396 Human DNA AL118987 Pan trog1 BS000.0303 Pan trog1 AC073846 Homo sapi AC013465 Homo sapi AC010605 Homo sapi AC01065 Homo sapi AC010467 Homo sapi AC08715 Homo sapi AC108670 Homo sapi AC08731 Homo sapi AC08731 Homo sapi AC08731 Homo sapi AC08735 Danio rer BC054627 Danio rer BC054627 Danio rer AC091296 Pan trog1 AL138717 Human DNA AL132710 Homo sapi	HOUNG HOUNG	linear PAT 09-JAN-2002 , Vertebrata; Euteleostomi; ni; Hominidae; Homo. Ebner,R., Endress,G.,
В ІО	HUMNITA HUMNITA HUMNITA BC0328 AX7057 AX0955 AX0955 AX7757	2 ACC62036 9 AL1139396 9 AC1139396 9 BC00203 9 AC073846 9 AC017465 9 AC117465 9 AC1165981 9 AC106547 9 AC08247 9 AC08247 9 AC08247 9 AC08247 9 AC08247 9 AC08247 9 AC1667301 5 BC084627 9 AC1301	ALSO306 AC097637 AC129486 AC129486 AC10594 HSJ74412 AC09914 AC09914 AC15994 AC115992 AC115992	3866 bp DNA GI:18126503 (human) stanza, Chordata, Craniata, V. Itheria, Primates, Catarrhini, Augustus, M., Carter, K.C., Ebn Soppet, D.R. and Weaver, Z. determination and therapeutic
% nery atch Length	100.0 100.0	10.8 190626 10.8 1908451 10.8 1908451 10.6 196470 10.6 198470 10.5 1985280 10.5 1985280 10.5 182280 10.5 186334 10.5 291153 10.5 291153 10.5 291153 10.5 291153 10.5 291153 10.5 1883280 10.5 188336 10.5 188336 10.5 188336	10.4 10.0 10.0 10.0 10.0 10.0 10.0 10.0	15784 uence 623 35784.1 35784.1 o sapiens aryota, E., marlota, E., rigan, S.,
Sco	1 1 2 2 9 2 9 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 L B D O L O C C C C C C C C C C C C C C C C C	44000000000000000000000000000000000000	RESULT 1 AX3.35784 AX3.5784 AX3.5784 LOCUS ACCESSION AX3.4020 AX3.4020 AX3.4020 AX3.4020 AX3.4020 AX3.4020 AX3.4020 AX3.4020 AUTHORS Hom

N

```
1140
                                                                                   1020
                                                                                                               1020
                                                                                                                                                                                                                                                               1200
                                                                                                                                                                                                                                                                                           1200
                                                                                                                                                                                                                                                                                                                         1260
                                                                                                                                                         CCATAATGAACAAAGTGAGAGACATTAAAATAAGTTTAAAAATGAAGACCTTACTGATG 1080
                                                                                                                                                                                                                                                                                                                                                                                  1320
                                                                                                                                                                                                                                                                                                                                                                                                              1320
                                                                                                                                                                                                                                                                                                                                                                                                                                          1380
                                                                                                                                                                                                                                                                                                                                                     1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1980
                          960
                                                     960
                                                                                                                                          CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG
                          ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG
                                               ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCCATCTTTTCATTTCCCCAG
                                                                               TGCACTTTTCTCTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT
                                                                                                    TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT
                                                                                                                                                                                                     AACTAAGCTTGAATAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA
                                                                                                                                                                                                                      AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA
                                                                                                                                                                                                                                                            TIGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATTIGCTGAATTAAAAAGCTATTCAAGAGCCAGATGATGATGCACGTGACTACTTTCAAATGG
                                                                                                                                                                                                                                                                                        Transandardacaaccaaccaagagacnggringagiingingcicaaaciagaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITCAGAGGAAAAAAGAAGTITTATCAGCATCTACGGTATTAACTGCCCAAGAATCAT
                                                                                                                                                                                                                                                                                                                                                                                TTGAAGCCCTTCCCCCAGATAAATATGCCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                          GATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTTTCAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ccadadcaaacrdcaagaaarrrdcrrrrrgrrcarararcrrrrrgcacaarrrgaacrgr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACAAGGTAATGTCAAAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1441 CACAAGGTAATGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTCAGAGGAGGAAAAAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTACTAAAGCCAGGTTTTTATATATGGAGAACATGCCACCACCACAAGATGCAGAAATAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCGGAATTCATTGAGACAAACTAACAAACTAAACAGTCATGCCCCATTTGGAAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCGGAATTCATTGAGACAAACTAACAAAACTAAAACAGTCATGCCCATTTGGAAGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTACTAAAGCCAGGTTTTTATATGGAGAGAAACATGCCACCACAAGATGCAGAAATAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGTTAACCTTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTTAACCTTCTAAATAGCCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTTATGAAAAGACAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTTTATGAAAAGACAAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACCAAGTGGAAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACCAAGTGGAAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATGATCATT
                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                  1201
                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                     901
                                                                                 196
                                                                                                             961
                                                                                                                                           1021
                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                          1141
                                                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                                                                                          1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1381
                       901
                                                                                                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1861
                                               g
                                                                                                     g
                                                                                 à
                                                                                                                                        \delta
                                                                                                                                                               g
                                                                                                                                                                                          à
                                                                                                                                                                                                                        ga
Vy
                                                                                                                                                                                                                                                                                업
                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  경염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 de 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                          CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAATTCCTTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                         CTTTTCTATTTAGTAGAGATTGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                           CTTTTCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accicaderearceactrecerrecercecaaerecraedarracaecereaaere
                                                                                                                                                                                                                                                                         CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCTTCCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                     CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCACCTGGCTAACTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                 CTCAGCCTCTAAGTAGCTGGGATTACAGGCATGTGCCACCACCACCTGGCTAACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCCTGGCTGATTCTTTTTTTTTGTTGGATTTTTTGAAACAGGGTCTCCCTTGGTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGCTGGAGTGGTGGTGCGATCTTGGCTCATATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTAATTTTTGTATTTTTTTTTTAGAGACAGGGTTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCTGGACTCAAGGGATCCGCCTGCCTCCAATTCCCGAAGTCCCGAAGTTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCTGGACTCAAGGGATCCGCCTGCCTCCCAAAGTCCCGAAGTTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTCACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTTCTGGTCCATTTCTTCTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCCTCCCACTTTAGCCTCCTGAGTAGCTGATTACAGGCGTGCACCACCACACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTAATTTTTGTATTTTTATTAGAGACAGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTCACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTTCTGGTCCATTTCTTCTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTCCTCACAAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITGGTTTAAATTAATTATCTAAATACTAAAAACATTTTTGGATACATTGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGGTTTAAATTAATTATCTAAATATCTAAAAACATTTTTGGATACATTGTTGATGTGA
                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAAGATGAATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCCACTGCACACTCCT
                                                                                                                                                                                    0
                                                                                                                                                        6; Length 3866;
                                                                                                                                                                                                                TGAGATGGAGTTTCACTCTTGTTGGC
                                                                                                                                                                                  Indels
                                                                                                                                                                                    .;
                                                                                                                                                        DB
                       13-DEC-2001;
                                                                                                                                                      Score 3866; I
Pred. No. 0;
; Mismatches
                                                             1. .3866
/organism="Homo sapiens"
/mol_type="unassigned DNA"
/db_xref="taxon:9606"
gene sets
Patent: WO 0194629-A 6293 13-
Avalon Pharmaceuticals (US)
Location/Qualifiers
                                                                                                                                                                                    .
0
                                                                                                                                                      100.0%;
                                                                                                                                                 Query Match
Best Local Similarity 100.
Matches 3866; Conservative
                                                                                                                                                                                                               GGAATTCCTTTTT
                                                                                                                                                                                                                                            н
                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                 source
                    JOURNAL
                                               FEATURES
                                                                                                                        ORIGIN
```

Db δ

 δ g \$ 8 S

8 8

qq 8 8 ò

के विक

,

DB 3361 TCAMAGATATCHTCHTCHTCHTCHTTTTTTTTTTTTTTTTTTATATCAGGAMATCAGGAMATT 3120	RESULT 2 HUMTTK LOCUS HUMTTK LOCUS HUMAN Kinase (TTK) mRNA, complete cds. ACCESSION M86699 VERSION M86699 I GI:340010 VERYORDS Homo sapiens (human) NGGNISM Homo sapiens (human) The Reference of the problem (human) NGGNISM AUTHORS MILIS (Schmandt, R., McGill, M., Amendola, A., Hill, M., Jacobs, K., May, C., Rodricks, A.M., Campbell, S. and Hogg, D. TITLE Expression of TTK, a novel human protein kinase, is associated with cell proliferation JOURNAL J. Biol. Chem. 267 (22), 16000-16006 (1992)
1981 TCAAGGAACCTCTGGTGTCAGATGAAAGATCTCGAACTTATATTATACTGATTCAATA 2040 1981 TCAAGGAACCTCTGGTGTCAGATGAAAGATCTCGAACTTATATTATTACTGATTCAATA 2040 1981 TCAAGGAACCTTGGTGTCAGATGAAAGATCTCAACTTATTATTACTGATTCAATA 2040 2041 CCCTGAAGAATAAAACGGAATCAACTTACAATTTAGAAGAAACTTAAAGATTC 2100 2041 CCCTGAAGAATAAAACGGAATCAACTTACAAATTTAGAAGAAAACTAAAGAAATTCCAACTTAAAGAAAATTCAAAACTTACAAAAATTCAAAATTCAAAAAATTCAAAATTCAAAATTCAAATTACAAAAAA	2821 AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAG 2880 2821 AGAAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTTAGAGGCAG 2880 2831 TTCACACAATCCATTGATCCATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA 2940 2831 TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA 2940 2941 TAGTTGATGGAATGCTAAAGCTAATTGATTTGGGATTGCAAACCACAATGCAACCAGATA 3000 2941 TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA 3000 2941 TAGTTGATGGAATGCTAAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA 3000 3001 CAACAGTGTTGTTAAAGATTCAGGTTAATTATTATTGCCACCAGAAGCAA 3060 3001 CAACAGAGTTGTTTAAAGATTCCAGGGGAAATTAATTATATGCCACCAGAAGCAA 3060 3061 TCAAAGATTGTTTAAAGATTCCAGAGGAAATTAATTATATGCCACCAGAAGCAA 3120

241 ACCTCAGGTGATCCACTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG 300	[TGCCTGGCTGATTCTTTTTTTTTGTTGGATTTTTGAAACAGGGTCTCCCTTGGTCGC	361 AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT 420	ていていて、そのでは、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これ	421 GATCCTCCCACTTTAGCCTCCTCAGTTACTATTACAGCGTGCACCACCACCAGG	r.	CTAATTTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA	5=	caaddarccdccrdccrccacrrccaaagrcccdadarracadd	601 AGTCACCATGCCTGACCTTATAATTCTTAAGTCATTTTTCTGGTCCATTTCTTCCTTAG 660 [GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA 7	_=	721 AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACACTCT 780	721 AGGAAGATGAAGTGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACTGCACTCCT 780	781 GGATGATGATCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA 840 	841 TITGGITIABATTAATTATCTAAAAACATTTTTGGATACATTGTTGA 900	841 TTTGGTTTAAATTAATTATCTAAATATCTAAAAACATTTTTGGATACATTGTTGATGTGA 900	901 AIGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG 960	961 IGCAGTITTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACTT 1020	961 TGCAGTTTTCTGTAGAAATGGBAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT 1020	1021 CCATAATGAACAAAGTGAGACATTAAAAATAAGTTTAAAAATGAGACCTTACTGATG 1080 	1081 AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA 1140 	1141 TTATGATGGCAAACCAACCCGGAGGACTGGTTGATTGTTGCTCAAACTAGAGAAA 1200 	ACGUITCCGCTAAGTGATGCTCTTTTAAATAAATAAATGGTGGTGGTTACAGTCAAGTCAAA	ACAGTGTTCCGCTAAGTGATGCTCTTTTAAATAAATTGATTG	1261 TTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA 1320 	1321 GATTTGCTGAATTAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGG 1380
qq	ò	qq	දි දි	}	<i>₹</i> 3	ò	ු අ	6	d d	රි සි	ò	Db	ò	q	oy Q	ò	ପୁପ	s B	ζ	Ор	Š G	ð A	<i>8</i> €	ò	qa	& 8	. Qy
MEDLINE 92348472 PUBMED 1639825	Original sou	source 1. 3866 /organism="Homo sapiens"	/mol_type="mkNA" /db_xren:9606" /cell_line="YTXC2"	/cell_type="T cell" /qermline		5'UTR 1979 /gene="TTK"	/note="butative" CDS /1026.1551 /dene="mmm"		/protein_id="AAA61239.1" /db_xref="G1:340011"	/translation="MNKYRDIKKKREDLTDELSLAKTSADTTDNSGTVNOIMMMAN	LEMLEIALRNLNLQKKQLLSEEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQ TYRARFUTGENNPPODABIGYNRTKQSCPFGROVVNLLNSPDCDVKTDDSV	TOSITEMENTENTENTENTENTENTENTENTENTENTENTENTENTE	TEMPAYKUDFPPACOLSTPYGGPPTS STANFULTELSTANTUDUTNSCE TTPVYKNDFPPACOLSTPYGGPACFQQQQQQUITAFLQNLQVLASSANECISVKGRI YSILKQIGSGGSSKVFQYLNEKKQIYALKYYNLEBADNQTLOSYRNETAYLKALOOHS	DKIIRLYDYEITDQYIYMYMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHO HGIVHSDLKPANPLIVDGMLKLIDPGIANOMOPDTTSVYKDSOVGTVNYMPPBAIKDM	4	<pre>intsc_reature 10262550 /gene="TTK" /note="requlatory or binding region: mutarive"</pre>	misc_feature 2551. 3351 /gene="TTK"	/note="kinase domain; putative" 3.UTR 3553. 3866 /gene="TTK"	/noce="pucative" polyA_signal	/note="putative"	Query Match 100.0%; Score 3866; DB 9; Length 3866; Best Local Similarity 100.0%; Pred. No. 0; Matches 3866; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	р— <u>г</u>	CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCCTCCCGGGTTCAAGGCATTC	rcaaddarrc cccreecraac	CTAATTT 18	181 CTTTTCTATTTAGTAGAGGTGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG 240	ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCTGGAACTG

엄 $\stackrel{>}{\circ}$ q

ò

g

 δ

d

à

ò

```
144 TIAAAATAAGTITAAAATGAAAATGAAGACCTTACTGATGAACTAAGTAAAATTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1649. .2449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . .2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Simi
Matches 2931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. (Dates 1 to 2980)
Altschuld, S.F., Feingold, E.A., Grouse, D.H., Derge, J.G.,
Klausner, R.D., Collins, F.S., Wagner, L., Schenmen, C.M., Schuler, G.D.,
Klausner, R.D., Collins, F.S., Wagner, L., Schener, C.K., Enat, N.K.,
Hopkins, R.F., Jordan, H., Moore, T., Max, S.I., Wang, J., Hsieh, F.,
Diatchenko, L., Marusina, K., Farmer, A.A., Rubin, G.M., Hong, L.,
Stapleton, M., Soares, M.B., Bonaldo, M.F., Casavant, T.L.,
Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S.,
Abramson, R.D., Mullahy, S.J., Bosak, S.A., McEwan, P.J.,
Morley, K.C., Hale, S., Garcia, A.M., Gay, L.J., Hulyk, S.W.,
Villalon, D.K., Muzny, D.M., Sodergren, F.J., Lu, X., Gibbs, R.A.,
Fahey, J., Helton, B., Ketteman, M., Madan, A., Rodrigues, S.,
Sanchez, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y.,
Butfard, G.G., Blakesley, R.W., Touchman, J.W., Green, E.D.,
Dickson, M.C., Rodriguez, A.C., Grimwood, J., Schmutz, J., Myers, R.M.,
Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E.,
Schnerch, A., Schein, J.E., Jones, S.J. and Marra, M.A.
Generation and initial analysis of more than 15,000 full-length
Human and mouse cDNA sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BCU12858
Homo sapiens TTK protein kinase, mRNA (cDNA clone MGC:33286
MAMGE:5270012), complete cds.
GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT 3600
                                                                                                                                                                                                          TTATGGCACTGTATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780
                                                                                                                                                                                                                                                                                                                         TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780
                                                                                                                                                                                                                                                                                                                                                                                   3781 TIGACATCATITIACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAACTTTG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                        3781 TIGACATCATTITACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NIH-MGC Project URL: http://mgc.nci.nih.gov
On Aug 25, 2003 this sequence version replaced gi:23271248.
Contact: MGC help desk
Email: ogaphs:r@mail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
cDNA Library Preparation: Michael J. Brownstein (NHGRI) & Shiraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (07-UN-2002) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                      3601 GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                 ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAACTGTAAAAATAGCAACCAC
                                                    GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BC032858.2 GI:34190560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 2980)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 2980)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       trausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                              3661
                                                                                                                                                                                                                  3661
                                                                                                                                                                                                                                                                       3721
                                                                                                                                                                                                                                                                                                                               3721
                                                    3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
BC032858
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REMARK
COMMENT
```

TITLE

```
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.B. Consortium/Limbr at: http://image.llnl.gov Series: IRAK Plate: 47 Row: p Column: 10
This clone was selected for full length sequencing because it passed the following selection criteria: Similarity but not identity to protein.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TIDNSGTVNOIMMANNPEDMLSLLLKLEKNSVPLSDALLNKLIGRYSQAIEALPPDK
YGQNESFARIGVRFAELKAIGEPDDARDYFGMARANCKKFAFVHISFAGFELSGGNVK
KSKQLLQKRYPEGAVPLEMLEIALRYLANLOKKQLLSBEEKKNLSASTYLTAGESFSGS
LGHLQNRNNSCDSRGGTTKAFLYGENMPPQDAEIGYRNSLRQTNKTKGSCPFGRYPV
NLLNSPDCDVKTDDSVYPCFRKRGTSRSECRDLVVPGSRKPGGNDSCELRNLKSVQNSF
FKEPLVSDEKSSELIITDSITLKNKTESSLLLAKLEETKEYQEPEVPESNQKGWGSKRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CKTPSSNTLDDYMSCĒRTPVVKNDFPPĀCQLSTPŸGQPACFQQQQQQLATPLQNLQV
LASSSANEIISVKGRIYSILKQIGGGGSSKVFQVLMEKKQIYAIKVYNLEEDDNQTLD
SYRNBIAZLNKLQQHSDKIIRLYDISTDQYIYMVMECGNIDLNSWLKKKKSIDPWER
KSYKNMLEAVHTIHQFGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDS
QVGYWYWYMPPAIKDMSSRRNGKSKSKISPKSDVWSLGCILYYMYGKTPPPQOIINQ
ISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTHPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'db_xref="LocusID:7272"
'translation="MESEDLSGRELTIDSIMNKVRDIKNKFKNEDLTDELSLNKISAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NQMAKGTTEEMKYVLGQLVGLNSPNS1LKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       985 CCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACA 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83
                                                                                               http://www.systemsbiology.org
contact: amadan@systemsbiology.org
Anup Madan, Jessica Fabey, Erin Helcon, Mark Ketteman, Anuradha
Madan, Stephanie Rodrigues, Amy Sanchez and Michelle Whiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="S_TKc; Region: Serine/Threonine protein kinases, catalytic domain" /db_xref="CDD:smart00220"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1045 TTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   925 GAAAACAGTITGGGTTCCATCTTTTCATTTCCCCAGTGCAGTTTTCTGTAGAAATGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 CCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24 GAAAGGAGTTTGGGTTTCCATCTTTTCATTTCCCCAGCGCAGCTTTCTGTAGAAATGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
Toshiyuki and Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Institute for Systems Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/mol type="mRNA"
/db Zref="taxon:9606"
/clone="MGC:3286 IMAGE:5270012"
/tissue type="Testis"
/clone_lib="NIH_MGC_97"
/lab_host="DH108"
/note="Wector: pBluescript"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PYT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              product="TTK protein kinase"
protein id="AAH32858.1"
db_xref="G1:23271249"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 2914; D
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="TTK"
/note="synonyms: MPS1L1,
/db_xref="LocusID:7272"
/db_xref="MIM:604092"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon start=1
```

LGHLONRNNSCDSRGOTTKÄRFLYGENMPPODAEIGYRNSLROTNKTKOGSCPFGRYPV NLLNSPDCDVYTDDSYVPCFMKROTSRSECRDLYVPGSKPSGNDSCELRNLKSVONSH FKEPL/NSDEXSSELITTDSITLKNYTESSLLAKLEETKEYGPFVGPFVPROKGWOSKKK SECTIONDAPASSNHWQI PELARKNYTEGYTTTFDSYVSVSKOGSPFVSTSKWPDFKSI CKTPSSNTLDDYMSCPTPVVKNDFPPACQLSTPYGQPACFQQQQHQILLATPLQNLQV LASSSANBCISYNGSTYSILKQIGSGGSKVFQVLNEKKQYYAKKYGIDAPLQNLQV LASSSANBCISYNGSTYTSILKQIGSGGSKVFQVLNEKKQYYAKKKKSIDEWBR KSYWKNMLEAYTTHOHGIVHSDLKPAPTLYUGMLLAIDFGANOMQPDTTSVYUDS QVGTVNYMPPEAIKDNSSSENGKSKSKISFKSDWAKLDFGTLAYPWTYSVTSVYDS QVGTVNYMPPEAIKDNSSSENGKSKSKISFKSDWAKLGTLYYWTYGKTPFPQLINQ ISKLHAIIDPNHEIBFPDIPEKDLQDVLKCCLKRDPKQRISTSVYWTYGKTPFPQLINQ K" RG NQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK K"	Query Match Best Local Similarity 99.5%; Score 2909.2; DB 6; Length 2975; Best Local Similarity 99.5%; Pred. No. 0; Matches 2928; Conservative 0; Mismatches 13; Indels 1; Gaps 925 GAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAGTGCAGTTTCTGTAGAAATGGAAT	31 GAAAGGGTITGGGTITCCAFCTITTCCTGTTFCCCAGCGCAGCTITCTGTAGAAATGGAAT 985 CCGAGGATTTAAGTGGCAAAATGACAATTGATTCCATAATGAACAAGGAC	151 TTAAAATTAAGTTTAAAATGAAGACCTTACTGATGAAGTGTGAATAAATTTCTG 1105 CTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGATGACAACCAG	OY 1165 AGGACTGGTTGAGTTTGTTGGTCGAGAGAGAGAGTGTTCCGCTAAGTGTTCTTCTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGT	1285 ITTTAAATAAATTGATTGGTCGTTACAGCCAATTGAGCCGTTCCCCCAGATAAAT 1285 ATGGCCAAAATGGTCGTTACAGTCAAGCAATTGAGCGCTTCCCCCAGATAAAT 1285 ATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC 1345 AAGAGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC 1345 AAGAGCCAGATGATGCACGTACATTCAAATGGCCAGAGCAAACTGCAAGAAATTTG 451 AAGAGCCAGATGATGCCACGTACATTCAAATGGCCAGAGCAAACTGCAAGAAATTTG	0	1585 TATCAGCATCTACGGTATTAACTGCCCAGAATCATTTCCGGTTCACTTCGGCATTTAC 16 691 TATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTCCGGTTCACTTGGGCATTTAC 16 691 TATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTCCGGTTCACTTGGGCATTTAC 15 1645 AGAATAGGAACACACTTCCAGAGGACACACTACTAAAGCCAGGTTTTTATATG 17 751 AGAATAGGAACACACTTGTGATTCCAGAGGACACACTACTAAAGCCAGGTTTTTATATG 17 1705 GAGAGAACATGCCACCACAAGAATAGGAATACCGGAATTCATTGAGACAAACTA 17 1705 GAGAGAACATGCCACCACAAGATGCAGAATAGGTTACCGGAATTCATTGAGACAAACTA 17 1811 GAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTCATTGAGACAAACTA 17 1811 GAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTCATTGAGACAAACTA 17 1811 GAGAGAACATGCCACCACAAGATGCAGAAATACCGGAATTCATTGAGACAAACTA 18 1811 GAGAGAACATGCCACCACAAGATGCAGAAATACCGGAATTCATTGAGACAAACTA 18 1811 GAGAGAACATGCCACACAAGATGCAGAAATACCGGAATTCATTGAGACAAACTA 18 1811 GAGAGAACATGCCACAAAGATGCAGAAATACCGGAATTCATTGAGACAAACTA 18 1811 GAGAGAACAACAACAAAAAACTA 18 1811 GAGAGAAACAACAAAAAACTA 18 1811 GAGAGAAAAACTA 18 1811 GAGAGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
Db 2364 AICTTCAAGATGTTTAAAAAGGGACCCAAAACAGAGGATATCCATTC 2423	3505 ATTCTTCATCCTCCAAGACTTTTGAAAAAAAAGGGGAAAAAAATGATTTGCAGTTATT	2664 GIBALIGICAGAIACCACCIAIAAANIAINIGGACIGITAIACICTIGAATCCCIGIGGA 272 3625 AATCTACATTIGAAGACAACATCACTGAAGIGTTATCAGCAAAAAAATTCAGTGAGA 368 2724 AATCTACATTIGAAGACAACATCACTCAAGTGTTATCAGCAAAAAAAATTCAGT-AGA 278 3685 TTATCTTTAAAAQAAACTGTAAAAATGCAACACTTATGGCACTGTATATTATATTATATTATAGA 374	2783 TIRICITIRARAGRARACIRIRARARAIRGCARCITAIGGCACTGIRIRIRITGTAGA 2 3745 CITGITITCICIGITITAIGCICITGIGRARAICTACTIGACACACTAGAITTTACTCTTGGAAT 3 2843 CITGITITCICIGITITAIGCICITGIGIAATCTACTIGACAICAITTTACTCTTGGAAT 2	OY 3805 AGTGGGTGGATAGCAAGTATATTCTAAAAACTTTGTAAATTAGTGGCTAAAAT 3864 Db 2903 AGTGGGTGGATAGCAAGTATATTCTAAAAACTTTGTAAATAAGTTTTGTGGCTAAAAT 2962 Qy 3865 GA 3866	SULT 4 775733 AX775733 FINITION SEQUENCE CESSION AX775733 RESION AX775733	Homo sapi Homo sapi Eukaryota Mammalia; I Matsuda,A NF-kB act Patent: W Asahi Kas	·

2905 TIGHTCOACACATACTACACACACACACACACACACACACACAC
B & B & B & B & B & B & B & B & B & B &
1955 MCDAMACTANACACTOCATTGGGAAGACTCCACATTACCTTCTTATACCTTCTTANACCCCOGG 930 1855 ATTGGAACTCGAACACCCACTTCGAAGACTCCTCTTTATCGAACACCTCTC 930 1865 ATTGCAACACTCGAACTCATTCATCTCTCTTTATCGAACACCTCTCT 930 1866 ATTCGAACACTCTCAACACTCTCCAACTCGAACTCTCTTTATCGAACACCTCTCT 930 1866 ATTCGAACACTCTCAACACTCTCCAACTCGAACTCTCTTTATCGAACACCTCTCTT 930 1866 ATTCGAACACTCTCTCAACACTCTCTCAACTCGATTCCAACTCGAACCCTCTT 930 1866 ATTCGAACACTTCTCAACTCTCCAACTCGATTCCAACTCGAACTCTCTT 930 1867 ATTCAACACTCTCTAACACTCTTCCAACTCGATTCCAACTCGAACTCTCTT 930 1867 ATTCAACACTCTCAACTCTTCCAACTCGATTCCAACTCGAACTCTCTT 930 1867 ATTCAACACTCTCAACTCTTCCAACTCTCTTTTCAACACACTCGAACTCTCTT 930 1867 ATTCAACACTCTTCAACTCTTCCAACTCTCTTTTCAACACACTCTCTCTT 930 1867 ATTCAACACTCTCAACTCTTCAACTCTCTTTTCAACACACTCTCTCTTT 930 1867 ATTCAACACTCTTCAACTCTTCAAATTCTAACACAACTCAACTCAACTCTCTCTTT 930 1867 ATTCAACACTCTTCAACTCTTCAAATTCTAACACAACTCAACTCAACTCTCTCTT 930 1867 ATTCAACACTTTCAACACACTCTTCAAATTCTAACACAACTCAACTCAACTCTCTCTT 930 1867 ATTCAACACTCTTCAACTCTTCAAATTCTAACACAACTCAACTCAACTCTCTCTCTT 930 1867 ATTCAACACTTTCAACACAACTCTCAAAATTCAACACACACACAAACTCAACTCTCTCTCTT 930 1867 ATTCAACACTCTTCAACACAAACTCAACACACACAAAACTCAACTCAACACTCA

```
75. .2648
/codon start=1
/producf="TX protein kinase"
/producf="TX protein kinase"
/protein id="AbH00633.1"
/db_xref="G1:12653.97"
/db_xref="LocusID:7272"
/translation="WassDiscrettingsimm.vvrpimm.vvrpimm.sdb
/translation="WassDiscrettingsimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvvpimm.vvrpimm.vvrpimm.vvrpimm.vvrpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvpimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvimm.vvvim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YGGNESFARÍQVRFAELKAIQEPDDARDYFOMARANCKKFAFVHISFAGFELSQGNVK
KSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLSEEEKKNISASTVITAQESFSGS
LGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSH
FKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQMQSKRK
SECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CKTPSSNTLDDYMSCERTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLONLQV
LASSSANECISVKGRIYSILKQIGSGGSSKVPQVLNEKKQIYAIKYVNLEBADNQTLD
SYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QVGTVNYMPPBAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQIINQ
ISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTHPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITIAAAIDAAATIGAITIGAIGGITACAGICAAGCAATIGAAGCGCTICCCCCAGAIAAAI 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1345 AAGAGCCAGATGATGGCGCGGGCGACTTCAAATGGCCAGAGCAAACTGCAAGAAATTG 1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KSYWKNWLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1285 ATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC 1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262 AGGACTGGTTGGTTGTTGCTCAACTAGAAAAACAGTGTTCCGCTAAGTGATGCTC 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="S_TKc; Region: Serine/Threonine protein kinases, catalytic domain" /db_xref="CDD:smart00220"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            985 CCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1045 TTAAAAATAAGTTTTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     142 TTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202 CTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCCGCTAAGTGATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAGTGCAGTTTTTCTGTAGAAATGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22 GAAAGGAGTTTGGGTTCCATCTTTCATTTCCCCAGCGCAGCTTTCTGTAGAATGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITIAATIAATIGATIGGTCGTTACAGTCAAGCAATIGAAGCGCTTCCCCCAGATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382 ATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2984;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13; Indels
                                                                              /tissue_type="Eye, retinoblastoma"
/clone_lib="NH# MGC 16"
/lab_host="DH10B-R"
/note="Vector: pOTB7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 9;
                                           clone="MGC:865 IMAGE:3343925"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75.3%; Score 2909.2; ilarity 99.5%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                             note="synonyms: MPS1L1,
                                                                                                                                                                                                                                                                                                                                                               db_xref="LocusID:7272"
db_xref="MIM:604092"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .2447
                                                                                                                                                                                                                                                                                      gene="TTK"
                                                                                                                                                                                                                                          .2984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1647.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Simi
Matches 2928;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L (Dasses 1 to 2994)

Altschul, S. F. Feingold, E. A., Grouse, L. H., Derge, J. G.,
Klausherg, R. L., Feingold, E. A., Grouse, L. H., Derge, J. G.,
Klausner, R. L., Collins, F. S., Wagner, L., Shenmen, C. M., Schuler, G. D.,
Klausner, R. L., Collins, F. S., Wagner, L. Batt, M. K.,
Hopkins, R. F., Jordan, H., Mooret, T. Max, S. I., Wang, J., Hsieh, F.,
Diatchenko, L., Marusina, K., Farmer, A. A., Rubin, G. M., Hong, L.,
Staplecon, M., Soares, M. B., Banddo, M. F., Casavant, T. L.,
Scheetz, T. E., Brownstein, M. J., Usdin, T. B., Toshiyuki, S.,
Abramson, R. D., Mullahy, S. J., Bosak, S. A., McEwan, P. J.,
McKernan, K. J., Malek, J. A., Gunaratne, P. H., Richards, S.,
Worley, K. C., Hale, S., Garcia, A. M., Gay, L. J., Hulyk, S. W.,
Vilalon, D. K., Muzny, D. M., Sodergren, E. J., Lu, X., Gibbs, R. A.,
Fahey, J., Helton, E., Ketteman, M., Madan, A., Rodrigues, S.,
Sanchez, A., Whiting, M., Madan, A., Young, A. C., Shevchenko, Y.,
Boutfard, G. G., Blakesley, R. W., Touchman, J. W., Green, E. D.,
Dickson, M. C., Rodriguez, A. C., Grimwood, J., Schmutz, J., Myers, R. M.,
Butterfield, Y. S., Krzywinski, M. I., Skalska, U., Smailus, D. E.,
Schnerch, A., Schein, J. E., Jones, S. J. and Marra, M. A.
Generation and initial analysis of more than 15,000 full-length
                     2984 bp mRNA linear PRI 12-NOV-2003
IMAGE:3343925), complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Obstact: nisc mgcanhgrinningov
Akhter, N., Ayele, K., Beckstrom-Sternberg, S.M., Benjamin, B.,
Blakesley, R.W., Bouffard, G.G., Breen, K., Brinkley, C., Brooks, S.,
Dietrich, N.L., Granite, S., Guan, X., Gupta, J., Haghighi, P.,
Pansen, N., Ho, S.-L., Karlins, E., Kwong, P., Laric, P., Legaspi, R.,
Maduro, O.L., Masiello, C., Maskeri, B., Mastrian, S.D., McCloskey, J.C.,
McDowell, J., Pearson, R., Stantripop, S., Thomas, P.J., Touchman, J.W.,
Tsurgeon, C., Vogt, J.L., Walker, M.A., Wetherby, K.D., Wiggins, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAL Plate: 5 Row: d Column: 11
This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 23308721.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 2984)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (15-NOV-2000) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WIH-MGC Project URL: http://mgc.nci.nih.gov
On Aug 20, 2003 this sequence version replaced gi:12653696.
Contact: MGC help dasa
Email: cgapbs-remail.nih.gov
Tissue Procurement: ATCC
CDNA Library Preparation: Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: National Institutes of Health Intramural
Sequencing Center (NISC),
Gaithersburg, Maryland;
Web site: http://www.nisc.nih.gov/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human and mouse cDNA sequences
Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
22388257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tsurgeon, C., Vogt, J.L., Walker, M.A., Young, A., Zhang, L.-H. and Green, E.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/mol_type="mRNA"
                                                                                                                                                                                                                                          BC000633.2 GI:33990673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 2984)
Strausberg, R.
Direct Submission
                                                                                                                                                                                                                                                                                                                             sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2477932
                                                                                                                                                                                                                                                                                                                             Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
RESULT 5
BC000633
                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
```

81

i,

Gaps

; ;

1104

141

201

1164

261

1224

381

1985 TICOMAMITTACAGGTITTACCACTOTTCCGCAAATCGAATCGATTCCGGTTAAACGAA 144. 245 GAATTATTCCATATTAAACAGATTCTCCACCAAATCGAATCCAATTCCACTTTCCGGTTAAACGAA 144. 246 GAATTATTCCATATTAAACAGATATACCAAATTCCAAATCGAAATCCAACACATTCCACTTTCACTTCCACTTCCACTTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCCACTTTCACTTCACTTCACTTCCACTTCACTTCCACTTTCACTTCCACTTCAC	CTTCATCCTCCAAGACTTTTGAAAAAAAAAAGGGGAAAAAAA
6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8	ପ୍ର
ATTCITTTGGACAATTTGAATGGCCAAGGAATGGCAAAAAAAAAA	522 CACCTIATGGCCAACCTGCTGTTTCCAGCAGCAACAGCATCAAATACTTGCCACTCCAC 15

	-		
OY 3565 GTAATGTCACATAGGAGTATAAAATATAGGACTGTTATACTCTTGAATCCCTGTGGA 3624 Db 2662 GTAATGTCAAAATACCACCTATAAAATATAGGACTGTTATACTCTTGAATCCCTGTGGA 2721		Qy 1137 Db 241	17 CARATTATGATGATGGCARACCACCAGAGGATTGGTTGATTGTTGCTCCARCTAGAG 1196
Qy 3625 AATCTACATTGAAQACAACATCACTCTGAAGTGTTATCAGCAAAAAAATTCAGTGAGA 3684 Db 2722 AATCTACATTTGAAGACAACATCACTCTGAAGTGTTATCAGCAAAAAAAA		Qy 1197 Db 301	77 AAAAACAGTGTTCCGCTAAGTGATGCTCTTTTAAATAATTGATTG
Qy 3685 TTATCTTTAAAAGAAAACTGTAAAAATAGCAACTATATGGCACTGTATATTGTAGA 3744		Oy 1257 Db 361	57 GCAATTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAA 1316
Qy 3745 CITGITITCICIGITITAIGCICITGIGIAANCIACTIGACATCATITIACICITGGAAN 3804	•	Oy 1317 Db 421	7 GTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAA 1376
Oy 3805 AGTGGGTGGATAGCAAGTATATTCTAAAAACTTTGTAAATAAA		Oy 1377 Db 481	77 AIGGCCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGCA 1436
Qy 3865 GA 3866 Db 2961 GA 2962		Qy 1437 Db 541	17 CTGTCACAAGGTAATGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGA 1496
		Oy 1497 Db 601	77 GCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAGCAG 1556
DUCUS AA427504 20-002 DUCUS AA427504 ACCESSION AX427504 VERSION AX427504.1 GI:21537650		Oy 1557 Db 661	;7 CTGCTTTCAGAGGAAGGAAATATTATCAGCATCTACGGTATTAACTGCCCAAGAA 1616
XEYWORDS . SOURCE . ORGANISM Homo sapiens (human) ORGANISM Homo sapiens (Chordata; Craniata; Vertebrata; Euteleostomi;		Oy 1617 Db 721	617 TCATTITCCGGTTCACTIGGGCATTTACAGAATAGGAACACACGTTGTGATTCCAGAGGA 1676
REFERENCE 1 AUTHORS Hodgson, D.M., Lincoln, S.E., Russo, F.D., Spiro, P.A., Banville, S.C., Bratcher, Shawn, R., Dufour, G.F., Cohen, H.J., Rosen, B.H., Shah, P.,		Qy 1677 Db 781	7 CAGACTACTAAAGCCAGGTTTTTATATGGAGAGAACATGCCACCACAAGATGCAGAAATA 1736
Chalup, M.S., Hillman, J.L., Jones, A.L., Xu, J.X., Greenawalt, L. Banzer, S.R., Roseberry, A.M., Wright, R.J., Chen, W., Liu, T., Yap, P.E., Stockdreher, T.K., Amshey, S. and Fong, W.T. Molecules for diagnostics and therapeutics		Oy 1737 Db 841	7 GGTTACCGGAATTCATTGAGACAAACTAACAAACTAAACGTCATGCCCATTTGGAAGA 1796
JOURNAL Parent: WO 0121836-A 14 29-MAK-2001; FEATURES Location/Qualifiers source 12980		Oy 1797 Db 901	7 GTCCCAGTTAACCTTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTA 1856
/organism="Homo sapiens" /mol_type="unassigned DNA" /db xref="taxon:9606" /note="Incyte ID No: 332465.2.dec"		Qy 1857 Db 961	57 CCTTGTTTTATGAAAAGACAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGA 1916
ORIGIN Query Match Best Local Similarity 99.1%; Pred, 0.0; Matches 2013. Conservative 0. Microsches 25. Indale 2. Cans.		Oy 1917 Db 1021	7 TCTAAACCAAGTGGAAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGT 1976
VOTA TABLES CONTROLLED STATES OF STA		Qy 1977 Db 1081	7 CATTICAAGGAACCICTGGIGICAGAIGAAAAGAGITCIGAACITATIAITAITACIGAITCA 2036
2 GCGACGGGGATTICAPACGIGIIIGCGGGAAAGGGAGITIGGGTICCAICIIIICAIIICCAIGGAGATTICAGGAATTIGGGGGGGGAGAATTGACGATTIGGGGAGAATTGACGATTIGGGGAGAATTGACGATTIGGGGGGGGGAGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTGAGGAATTAGAGGAATTGAGGAATTAGAGAATTAGAGAATTAGAGAATTAGAGAATTAGAGAATTAGAGAATTAGAGAATTAGAGAATTAGAGAATTAGAATTAGAGAATTA		Qy 2037 Db 1141	7 ATAACCCTGAAGAATAAAACGGAATCAAGTCTTCTAGCTAAATTAGAAGAAACTAAAGGG 2096
1017 GATTCCATAATGAAAAAGGGAGAATCCAAGGAATTAAAAATAAGGAATGAACATAACTTAAAAAATAAAGTAATGAAGAATTAAAAAAAA		Qy 2097 Db 1201	7 TATCAAGAACCAGAGGTTCCAGAGTAACCAGAAACAGTGGCAAGCTAAGAGAAAGTCA 2156
1077 GAIGGACTAAGCTIGAATAAATTTCTGCTGATACTACAGAAAACTGGGGAACTGTTAAC 1		Qy 2157 Db 1261	7 GAGTGTATTAACCAGAATCCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCC 2216
Db 181 GATGAACTAAAGTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC 240		Qy 2217	

1894

1500

us-10-081-119-13.rge

```
GCCACCACAAGATGCAGAAATAGGTTACCGGAATTCATTGAGACAAACTAA
                                                                                                                                                                                                                                                                                                                       1441 GAAGACAGATGATTCAGTTGTACCTTGTTTTATGAAAAAGACAAACCTCTAGATCAGAATG
          TACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGGCATTTACAGAATAGGAA
                                                                                                                                                                                                                                      GAAGACAGATGATTCAGTTGTACCTTGTTTTATGAAAAGACAAAGCTCTAGATCAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                         CCGAGATTTGGTTGTGCCTGGATCTAAACCAAGTGGAAATGATTCCTGTGAATTAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATACAG---AGAAACATACCACTTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAACCTGTCTTTTCAGTTTCAAAACAGTCACCACCAATATCAACATCTAAATGGTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCAAAATCTATTTGTAAGACACCCAAGCAGCAATACCTTGGATGATTACATGAGCTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1978 TAGAACTCCAGTTGTAAAGAATGACTTTCCACCTGCTTGTCAGTTGTCAACACCTTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGTTACCGGAACGAAATAGCTTATTTGAATAAACTACAACAACACAGTGATAAGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGTTACCGGAACGAAATAGCTTATTTGAATAAACTACAACAACAACAGTGATAAATCAT
                                                                                         CAACAGTTGTGATTCCAGAGACAGACTACTAAAGCCCAGGTTTTTATTATGGAGAACAT
                                                                                                                                  GCCACCACAAAGATGCAGAAATAAGGTTACCGGAATTTCATTGAGACAAAACTAACAAAACTAA
                                                                                                                                                                                                                   <u> ACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCTTCTAAATAGCCCAGATTGTGATGT</u>
                                                                                                                                                                                                                                                                                                                                                                                  CCGAGATITGGTTGTGCCTGGATCTAAACCAAGTGGAAATGATTCCTGTGAATTAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACCTCTGGTGTCAGATGAAAAGAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTAAAGTCTGTTCAAATAGTCATTTCAAGGAACCTCTGGTGTCAGATGAAAAGAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAACTTATTATTACTGATTCAATAACCCTGAAGAATAAAACGGAATCAAGTCTTCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAATTAGAAGAAACTAAAGAGTATCAAGAACCAGAGGTTCCAGAGAGTAACCAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAAATTAGAAGAAACTAAGAGTATCAAGAACCAGAGGTTCCAGAGAGTAACCAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGCAATCTAAGAGAAAGTCAGAGTGTATTAACCAGAATCCTGCTGCATCTTCAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAACCIGICITITICAGITICAAAACAGICACCACCAATATCAACAICIAAATGGITIGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGAACTCCAGTTGTAAAGAATGACTTTCCACCTGCTTGTCAGTTGTCAACACCTTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAACCTGCCTGTTTCCAGCAGCAACAGCATCAAATACTTGCCACTCCACTTCAAAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGGTTTTAGCATCTTCTTCAGCAAATGAATGCATTTCGGTTAAAGGAAGAATTTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAACAGATATATGCTATAAAATATGTGAACTTAGAAGAAGCAGATAACCAAACTCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGCAAGCTAAGAGAAAGTCAGAGTGTATTAACCAGAATCCTGCTGCATCTTCAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAAATACAGAGCAGAAACATACCACTTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCAAAATCTATTTGTAAGACACCAAGCAGCAATACCTTGGATGATTACATGAGCTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAACCTGCCTGTTTCCAGCAGCACAGCATCAAATACTTGCCACTCCACTTCAAAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u> ACAGGITTTTAGCATCTTCTTCAGCAAATGAATGCATTTCGGTTAAAGGAAGAATTTATTC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATATTAAAGCAGATAGGAAGTGGAGGTTCAAGCAAGGTATTTCAGGTGTTAAATGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAACAGATATATGCTATAAAATATGTGAACTTAGAAGAAGCAGATAACCAAACTCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATATTAAAGCAGATAGGAAGTGGAGGTTCAAGCAAGGTATTTCAGGTGTTAAATGAAAA
                                                                                         1261
                                                                                                                                                                         1321
                                                                                                                                1715
                                                                                                                                                                                                                                                                                                 1835
                                                                                                                                                                                                                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2255
          1201
                                                    1655
                                                                                                                                                                                                                   1775
                                                                                                                                                                                                                                                                                                                                                                                  1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2495
                                               8
                                                                              g
                                                                                                                 S
S
S
                                                                                                                                                                                                                                             g y
                                                                                                                                                                                                                                                                                                                           8 à
                                                                                                                                                                                                                                                                                                                                                                                                                8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            영양
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S A
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8
Economy, Trade and Industry of Japan; cDNA full insert sequencing:
Research Association for Biotechnology (RAB); cDNA library
construction: Helix Research Institute (HIN) (supported by Japan,
Key Technology Center etc.); 5'- & 3'-end one pass sequencing: RAB,
HRI, and Biotechnology Center, National Institute of Technology and
Evaluation; clone selection for full insert sequencing: HRI and
RAB; annotation: HRI and RAB.

| Cocation/Qualifiers | 1. 24pt |
| Cocation/Qualifiers |
| Coc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAA 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITAAACCTCCAAAAAAAGGGGGGGGTITCAGAGGAAGAAAGAAGAAGAATTTATCAGCATC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITAAACCICCAAAAAAAGCAGCIGCITICAGAGGAGGAAAAGAAGAATITAICAGCAIC 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGGCATTTACAGAATAGGAA 1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTAGTGATAGCGACGGGGAAATTCAAACGTGTTTGCGGAAAGGAGTTTGGGTTCCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTTAAAATGAAGACCTTACTGATGAACTAAGCTTGAATATAAAATTTCTGCTGATACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATTGTTGATGTGAATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITCATITCCCCAGTGCAGTITICTG------TAGAAATGGAATCCGAGGATIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITCATTICCCCAGCGAGCTITCTGTAGTTTTTTTTTTAGAAATGGAATCCGAGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACATTAAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACATTAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTCTGCTGATACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCAGAGGACTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCCAGAGGACTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTTTGTTGCTCAAACTAGAGAAAAAACAGTGTTCCGCTAAGTGATGCTCTTTTAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCCGCTAAGTGATGCTCTTTTAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAAGCTATTCAAGAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGATGCACGTGACTACTTTCAAATGGCCAGAGCAAACTGCCAAGAAATTTGCTTTTGTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGCACGTGACTTTCAAATGGCCAGAGCAAACTGCAAAATTGCTTTTGTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATATCTTTTGCACAATTTGAACTGTCACAAGGTAATGTCAAAAAAAGTAAACAACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCCAGATAAATATGGCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCAGATAAATATGGCCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                             15;
                                                                                                                                                                                                                                                                                                                                                                                                     2419;
                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                             28; Indels
                                                                                                                                                                                                                                                                                                                                                                                                     DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                   Score 1847.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                 47.8%;
ilarity 97.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 1899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1595
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 & 9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
```

1740

1800

2254 1857 2314 1917 2374 1977 2434 2494

2614

2157

2674 2277 2337

d δ d

ò

ACCESSION

```
/product = "Ttk protein"
/product = "Ttk protein"
/product = "Ttk protein"
/product = "Ttk protein"
/protein id = "AAH58651.1"
/db xref = "Locus1D: 27137"
/db xref = "Locus1D: 27137"
/translation = "WEAEELIGSSYTIDSINSKMEDIKNKINEDCTDELSLSKICADH
/translation = "WEAEELIGSSYTIDSINSKMEDIKNKINEDCTDELSLSKICADH
/translation = "WEAEELIGSSYTIDSINSKMEDIKNKINEDCTDELSLSKICADH
/translation = "MEAEELIGSSYTIDSINSKMEDIKNKINEDCTDELSLSKICADH
/translation = "The Comparison of the Comparison = "The Comparison = "T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1151 GCCAAACAACCCAGAGGACTGGTTGAGTTTGCTCAAACTAGAGAAAAAAAGAGTGTTGC 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 6678462. Location/Qualifiers
                                                                                                                                        /organism="Mus musculus"
/mol type="mRNA"
/strain="BS/BGFP transgenic ICR mice"
/db_xref="taxon:10090"
/db_xref="taxon:10090"
/clone="MGC:66885 INAGE:30023533"
/tissue_type="Trophoblast Stem Cell, mouse, 3.5 dpc"
/clone_Iib="NIA Mouse Trophoblast Stem Cell cDNA Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1567. .2367
/noce="S_TKC; Region: Serine/Threonine protein kinases,
catalytic Gomain"
/db_xref="CDD:smart00220"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297 rciaaardacdarciriraaaraagcrdarrdgrddgraagrdaagcdarrgaacr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             971 IGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rtragaaariggaggcrgaagagrraarriggcagcagrgrgacgarrigarrcarcargag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          186 grcraaaarchgrd-----ccgarcacagaaaacrgraaccaaarrargaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237 IGGGAACACCCCAGAGAACIGGITGAATITTCIIGCIGAAACTAGAGAAAAACAGCICACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCCCCAGATAAATATGGCCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1211 GCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAGTGAGAGACATTAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    559; Indels 103; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 2906;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LKTAKTLYERYNCGEGODSSSSKTFDKKRERK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
42.3%; Score 1634.6;
Best Local Similarity 76.8%; Pred. No. 0;
Matches 2193; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="synonyms: PYT, esk,
/db_xref="LocusID:22137"
/db_xref="MGI:1194921"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'lab_host="DH10B"
'note="Vector: pSPORT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="Ttk"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . .2906
                                                                                                                                                                                                                                                                                                                                                                                                                                  (Long)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8, 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Max musculus

Eukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Mus.

1 (bases 1 to 2966)

Straubberg, E.L., Feingold, E.A., Grouse, L.H., Derge, J.G., Klausner, R.L., Feingold, E.A., Grouse, L.H., Derge, J.G., Klausner, R.L., Collins, F.S., Wagner, L., Schemen, C.M., Schuler, G.D., Altschult, S.F., Zeeberg, B., Buetow, K.H., Schefer, C.F., Bat., N.K., Hopkins, R.F., Jordan, H., Moore, T., Max, S.I., Wang, J., Hsieh, F., Diatchenko, L., Marusina, K., Parmer, A.A., Rubin, G.M., Hong, L., Stapleton, M., Soares, M.B., Bonaldo, M.F., Casavant, T.L., Schetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S., Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J., Abramson, R.D., Malek, J.A., Gunaratne, P.H., Richards, S.W., Morley, K.C., Hale, S., Carcia, A.M., Gay, L.J., Hulyk, S.W., Villalon, D.K., Mulahy, S.J., Bosak, S.A., McMann, P.J., Whilmhy, M., Sodergren, E.J., Lu, X., Gibbs, R.A., Fahey, J., Helton, B., Ketteman, M., Young, A.C., Shevchenko, Y., Butchen, B., Ketteman, M., Young, A.C., Shevchenko, Y., Butchard, G.G., Blakesley, R.W., Touchman, J.W., Green, E.D., Butcefield, Y.S., Krzywinski, M.I., Skalska, U., Snanchard, S., Kalska, U., Snanchard, S., Kalska, U., Schein, J.E., Jones, S.J. and Marra, M.A. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences

Burganser, R.B., Malland, S.L., G., 16899-16903 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-rement: Int. gov

Email: cgapbs-rement: Dr. Janet Rossant and Tilo Kunath (Samuel
Lunenfeld Research Institute, Canada)

CDNA Library Preparation: Yulan Piac and Minoru Ko (National
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Baylor College of Medicine Human Genome
Sequencing Center
Center code: BCM-HGSC.
Web site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: amg@bcm.tmc.edu
Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Loulseged, H.,
Kowis, C.R., Sneed, A.J., Martin, R.G., Muzny, D.M., Nanavati,
A.N., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Series: IRAK Plate: 111 Row: m Column: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                      2906 bp mRNA linear ROD 21-OCT-2003
Mus musculus Trk protein kinase, mRNA (cDNA clone MGC:60685
IMAGE:30023533), complete cds.
                                                                                                                    2338 CCGACTTTATGATTATGAAATCACGGACCAGTACATCTACATGGTAATGGAGTGTGGAAA 2397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (01-0CT-2003) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                    CCGACTTTATGATTATGAAATCACGGACCAGTACATCTACATGGTAATGGAGTGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                 TATTGATCTTAATAGTTGGCTT 2816
                                                                                                                                                                                                                                                                                         2398 TATTGATCTTAATAGTTGGCTT 2419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BC058851.1 GI:37589052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 2906)
Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2477932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BC058851
                                                                2735
                                                                                                                                                                                                                     2795
                                                                                                                                                                                                                                                                                                                                                                                                 BC058851
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
```

1090

REMARK COMMENT

TITLE

185

us-10-081-119-13.rge

```
면
장
연
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ર્જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                          상 원
                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                 \delta
                                                 셤
                                                                       ò
                                                                                                    g
                                                                                                                                     ò
                                                                                                                                                          g &
                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                           8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / GOOD state = 1
/ GOOD state = 1
/ GOOD state = 1
/ CARELISES.1"
/ DECOLOR STATE = 1
/ CARELISES.1"
/ AD _ xref = "G1:32693450"
/ LATANGUMENTERMINELIKLERMINELIKIGENYGAREULEPEKKICADH
/ LTATANGUMENYGAT PERMUNELIKLERMINELIKATIGENYGAREULEPEKKGON
ESFARIQUALELKAIQEPDDARDY FOWARENCKKFAFVHVSFAGFELSGRIKKSEQ
ESFARIQUATERMINELLOKKÖLLPEBDKKSVSASTVLSAGREFSSSEGAN
GNESISCESRGQAGAARVLYGENLPPODAEVRHQNFRKGTHAAKRSCFFRYVWILIN
SPDFYVKTDSSAYTQLTTRKGSGPBDRALILEBEKKESPRGSDSYELRGLKFYTUNDLIN
SPDFYVKTDSSAYTQLTTRKGSGPBDRALILEBEKKESPRGSDSYELRGLFKTTLTKDSL
VSNEKSSELMSDL.IALKSKTDSSITKLEETKEBIAERRPMQWGSTRKFBCVFQNPAAF
APLRHVPDVTPKADKESPFISVPRULDFRSSSIGSSSSINGSSSSINGSTREISFYPVRULDS
SRYFFQVINNEKKQINAIRVNULDBADSGTIESSYNBIAFLNULQQCQGG
SSKYFQVLANEKKQINAIRVNULDBADSGTIESSYNBIAFLNULQQCGSG
SSKYFQVLANEKKQINAIRVNULDBADSGTIESSYNBIAFLNULQQCGSNBY
INVITYDGMLKLIPPTADRASCTIESSYNRULAENTSSSINGTIESSYNBY
KVSPRSDVWSLGCILYYMTYGRIPFQHINQVSKLHAIINPAHEIEFPBISERDIKBV
LKCCLYNRNPKERISIPELTHPYVQIQPHGSQWARGATDEMKYVLGQLVGLNSPNSI
LKTAKTLYERYNCGGGGSSSSKTFDKKRERK"
              2567
                                                                    2621
                                                                                                 3660
                                                                                                                            2681
                                                                                                                                                                                 2738
                                                                                                                                                                                                            3777
                                                                                                                                                                                                                                         Actroaraccactererarantaracaerrerecentricerritarecentricera 2798
                                                                                                                                                                                                                                                                                                                                                                     PAT 14-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata, Vertebrata, Euteleostomi,
Sciurognathi, Muridae, Murinae, Mus
AAACAAACAAACATCAGTAGATTATCCTCAAAAGAAGCTGTAAAGTT---AACC
                                                                                                                                                        ACTIATGGCACTGTATATTGTAGACTTGTTTTCT-CTGTTTTATGCTCTTGTGTAATC
                                                                                                                    Arecacacacaracaaaccaada - - - - - acacragarrerrrccrcreccaracter
                                                                                                 TGAATCCCTGTGGAAATCTA-CATTTGAAGACAACATCACTCTGAAGTGTT,-----
                                           ATTIGCAGITATICGTAATGICAGATAGGAGGTATAAAATATAGGACTGITATACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42.2%; Score 1633; DB 6; Length 2860;
llarity 76.8%; Pred. No. 0;
Conservative 0; Mismatches 560; Indels 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2860;
                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .2860
/organism="Mus musculus"
/mol_type="mRNA"
/db_xref="taxon:10090"
56. .2548
/note="unnamed protein product"
                                                                                                                                                                                                                                                                     TACTIGACATCATITIACTCTIGGAATAGIGGGTG 3812
                                                                                                                                                                                                                                                                                                AATCTGCTAATGTTTTACGTTTGGAACAGTGAATG 2833
                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NF-kB activating gene
Patent: WO 03048202-A 112-JUN-2003;
Asahi Kasei Kabushiki Kaisha (JP)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                AX775731 2860 bp
Sequence 1 from Patent WO03048202.
AX775731
                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (house mouse)
Mus musculus
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
Matsuda, A. and Muramatsu, S.
                                                                                                                                                                                                                                                                                                                                                                                                             AX775731.1 GI:32693449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Simil
Matches 2192; C
                 2508
                                                                         2568
                                                                                                    3611
                                                                                                                             2622
                                                                                                                                                          3661
                                                                                                                                                                                      2682
                                                                                                                                                                                                               3719
                                                                                                                                                                                                                                            2739
                                                                                                                                                                                                                                                                       3778
                                            3551
                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                            RESULT 9
AX775731
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                       8
                 임
                                           ò
                                                                    g
                                                                                                    8 G
                                                                                                                                                        ò
                                                                                                                                                                                셤
```

1030 12;

Gaps

TGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAGAATTGATTCCATAATGAA

Similarity

ò

```
1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1110
                                                                                                                                                                                                                                                                                                                                                                                                        1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGITITIATATGGAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTC 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGAGACAAACTAACAAACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCT 1810
                                                                                         1150
                                                                                                                                                        1210
                                                                                                                                                                                                                   1270
                                                                                                                                                                                                                                                                               1330
                                                                                                                                                                                                                                                                                                                                            1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         756
                                                                                                                                                                                    276
                                                                                                                                                                                                                                                                                                                                                                        456
                                                                                                                                                                                                                                                                                                                                                                                                                                      516
TCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTTATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAAATAGTCATTTCAAGGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITGGIGICCAAIGAAAAGAGIICIGAAC---IIAIGICIGAIIIAAIAGCCIIGAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Akchahaggggrichgghachga---ccahahcgcgarircigccgggrichgahachga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAAACGGAATCAAGTCTTCTAGCTAAATTAGAAGAAACTAAAGAGTATCAAGAACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cágigáiricciaigáacigágaggriraaagcccafricaaactarcrarrigaaagacrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGGTGTCAGATGAAAAGAGTTCTGAACTTATTATTACTGATTCAATAACCCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                      crecaadaagririecririrerecacerarcririrecacacriridaacrercricaageda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            577 GAIGCIGGAGACGGCCAIGCGIAACIIACACCICCAGAAAAAGCAGCIGCIICCGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1571 GGAAAAGAAGTTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTIGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Actrochanternehannedagearcherererenenedageacheereere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   crichagcagactcacgcagctaaacggreargccccririggaagagcccagtcaarcr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGACAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTAAACCAAGTGG
                                                                                         GGCAAACAACCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCC
                                                                                                                                                                                                                  1211 GCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCT
                                                                                                                                                                                                                                              277 TCTAAATGACGATCTTTTAATTAAGCTGATTGGTCGGTATAGTCAAGCGATTGAAGTACT
                                                                                                                                                                                                                                                                                                 ATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAA
                                                                                                                                                                                                                                                                                                                                                                TGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGA
                                                   reseabcaceceasaberesiridaaririceriseabaciasabaaaaakeeceace
                                                                                                                                                                                                                                                                               TCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                         CTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTAA
                               CAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1111
                                                                                                                             166
                                                                                                                                                           1151
                                                                                                                                                                                                                                                                                  1271
                                                                                                                                                                                                                                                                                                                                                 1331
                                                                                                                                                                                                                                                                                                                                                                             397
                                                                                                                                                                                                                                                                                                                                                                                                             1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1511
                                                                                               1091
                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                                                                                                                                                                                            457
    9,
                                  1031
                                                                109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
```

1631 ACTTGGGGCATTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAAGC 1690 161	1916 1039 1099 2036 1156 1209	2156 AGAGTGTATTAACCAGAATCCTGCTGCATCTTCAAATCATGGCAGTTCCGGAGTTAGC 221 2161 GAGTGTGTTTCAGAACCTGCTGCTTTGACCCCTGGGAGTTCCGGAGTTAGC 221 2216 CGGAAGGCTGATTAACCAGAACATACCTGCCTTTTGAGCACTTCCAGATGTTC 227 2217 CCCGAAGGCTGATAATACAGAACATACCTGACTTTTGAGCACCTGTTTTC 227 2218 AAAACAGCTGACAATATCAGTTCAGTTTCAGTTTCCAAGATTTTTTTT	1635 IGGAGGILCUAGIANGGIGILICAGGIACOTAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGC 26
> 4 > 6 > 6 > 6 > 6 > 6	86868686	1 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B	- A
/cell_type="stem_cell" 38260a note="putative" /codon_start=1 /produce="sek_kinase" /produce="sek_kinase" /protein_id="AAA37578.1" /protein_id="AAA37578.1" /protein_id="ymazellossytidsimspublikkineDcTdelsleskiCADH /translation="mazellossytidsimspublikkineDcTdelsleskiCADH /translation="mazellossytidsimspublikkineDcTdelsleskiCADH /translation="mazellossytidsimspublikkineDcTdelsleskiCADH /translation="mazellossytidsimspublikkineDcTdelsleskiCKSPD /translation="mazellossytidsimspublikkineDcTdelsleskiCKSPD /translation="mazellossytidsimspublikkineDcTdelsleskiCKSPD /translation="mazellossytidsimspublikkineDcTdelsleskiCKSPD /translation="mazellossytidsimspublikgened" // ONESISCERROQAGAAAVYLOSENLEPODAEVTHQNUPRAGEPESSSIGNV / ONESISCERROQAGAAAVYLOSENLEPODAEVTHQNUPRAGESPESSIGNV / ONESISCERROQAGAAAVYLOSENLEPODAEVTHQNUPRAGESPESSIGNV / ONESISCERROQAGAAAVYLOSENLEPODAEVTHQNUPRAGESPESSIGNV / ONESISCERROQAGAAAVYLOSENLEPODAEVTHQNUPRAGESPESSIGNV // ONESISCERROQAGAAAVYLOSENLEPONTAGENLEPONT / ONESISCERROQAGAAAVYLOSENLEPONTAGENLEPONT // ONESISCERROGAGAAAVYLOSENLEPONTAGENLEPONT // ONESISCERROGAGAAAVYLOSENLEPONTAGENLEPONT // ONESISCERROGAGAAAVYLOSENLEPONT // ONESISCERROGAGAAAVAT // ONESISCERROGAGAAAVAT // ONESISCERROGAGAAAAT // ONESISCERROGAGAAAAT // ONESISCERROGAGAAAAT // ONESISCERROGAGAAAAT // ONESISCERROGAGAAAAAT // ONESISCERROGAGAAAAAT // ONESISCERROGAGAAAAAT // ONESISCERROGAGAAAAAT // ONESISCERROGAGAAAAAT // ONESISCERROGAGAAAAAT // ONESISCERROGAGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	OBEGIN Query Match Best Local Similarity 74.9%; Pred. No. 0; Matches 2194; Conservative 0; Mismatches 561; Indels 175; Gaps 12; Matches 2194; Conservative 0; Mismatches 561; Indels 175; Gaps 12; QY 971 TGTAGAAATGGAAATTAAAGTGGCAGAGAATTGAATTGA	1151 GGCAAAAATCTGTG	619 GGACAAGAAGAGTGTCAGCATCGACAGTACTAAGTGCCCAAGAGCCGTTCTCCAGCTC 678

```
31. ... > 946
/codon_start=1
/product="phosphotyrosine picked threonine kinase (PYT)"
/product="phosphotyrosine picked threonine kinase (PYT)"
/protein_id="CAA49912.1"
/db_xref="G1:312816"
/db_xref="G0A:015.272"
/db_xref="G0A:015.272"
/db_xref="SPTERMBL:015.272"
/db_xref="SPTERMBL:015.272"
/db_xref="SPTERMBL:015.272"
/db_xref="SPTERMBL:015.272"
/db_xref="SPTERMBL:015.272"
/db_xref="G0A:015.272"
/db_xref="G0A:0
                                                                                                                                                                     H.sapiens mRNA for phosphotyrosine picked threonine kinase (PYT). X70500 S33714 X70500.1 GT:312815 Phosphotyrosine picked threonine kinase (PYT). Homo sapiens (human)
        2767 GTAAAGTT----AACCACTCATAGCACTGTGTATATTAAATTATAGAGTTGTGCTTTTCTT 2823
                                                                                                                                                                                                                                                                                                                                           Eukaryota.

Bukaryota.

Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.

(Dases I to 946)

Lindberg, R.A., Fischer, W.H. and Hunter, T.

Characterization of a human protein threonine kinase isolated by screening an expression library with antibodies to phosphotyrosine on a consequence (2), 351-359 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     103 ATTTATICCATATIAAAGCAGATAGGAAGTGGAGGTTCAAGCAAGGTATITCAGGTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGATCATCCGACTTTATGATTATGAAATCACGGACCAGTACATCTACATGGTAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGATCATCCGACTTTATGATTATGAATCACGGACCAGTACATCTACATGGTAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGAAAAGAAACGATATATGCTATAAAATATGTGAACTTAGAAGAAGCAGATAACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTCTTGATAGTTACCGGAACGAAATAGCTTATTTGAATAAACTACAACAACACAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGGAAATATTGATCTTAATAGTTGGCTTAAAAAGAAAAAATCCATTGATCCATGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGAAAAGAAACAGATATATGCTATAAAATATGTGAACTTAGAAGAAGCAGATAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23.2%; Score 895.4; DB 9; Length 946; 99.9%; Pred. No. 1.3e-177; ive 0; Mismatches 1; Indels 0
                                                 TGCTCTTGTGTAATCTACTTGACATCTTTTACTCTTGGAATAGTGGGTG
                                                                                       2824 Trangeritrergiaaarengeraargitraagaagaagaang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .946
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 896; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oncogene 8
93149596
7678926
                                                 3763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     343
                                                                                                                                                                                                                  DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
PUBMED
FEATURES
                                                                                                                                                          11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOS
                                                                                                                                                     RESULT :
HSPYT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                g
                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DP
1872
                                                                                                                                                                                                                                           2875
                                                                                                                                                                                                                                                                                                                                                                                                              2995
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTICAGCAGATAAATCAGATTICTAAATTACATGCCATAATTGATCCTAATCATGA 3235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATTGAATTTCCCGATATTCCAGAGAAGATCTTCAAGATGTGTTAAAGTGTTTTAAA 3295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATTGAATTTCCCCAGATTTCGGAAAAAGATCTTCGAGACGTGTTAAAGTGCTGTTTAGT 2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCCAACTIGITGGICTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATA 3475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2766
                                                                                                                                                                                       CACCGAGCAGTACATCTACATGGTAATGGAATGTGGAAACATTGACCTAAATAGTTGGCT
                                                                                                                                                                                                                                                            TTATTTGAATAAACTACAACAACAGGGGATAAGATCATCCGACTTTATGATTATGAAAT
                                                                                                1753 GTTTTTGAACAACTACAGCAACACAGTGATAAGATCATCCGCCTCTATGATTATGAAAT
                                                                                                                                                                                                                                                                                                                                                          GGCAGTACACATAATCCATCAGCATGGTATTGTTCATAGTGATCTGAAGCCTGCTAACTT
                                                                                                                                                                                                                                                                                                                                                                                                       TCTGATAGTTGATGGAATGCTAAAGCTAATTGATTTTTGGGATTGCAAACCAAATGCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTGATAGTGGATGGAATGCTAAATTGATTTTGGGATTGCAAACCAAATGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATACAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAATCAGAGACATGTCTTCAAGAGAAAATTCGAAAATCAGGACCAAGGTAAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACGGACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCT
                                                                                                                                                                                                                                  TAAAAAGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGA
                                                                                                                                                                                                                                                                                                                       GGCAGTTCACACATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACACAACAAGCATTGTTAAAGATTGTCAGGTTGGCACAGTTAACTATATGGCCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAAGTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAATCAAAGATATGTCTTCCTCCAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2233 ATTICAGCACATCATCAGTCTCTAAACTGCACGCCATAATCAACCTGCTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3296 AAGGGACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTCAACTTGTTGGTCTGAATTCTCCTAACTCCATCTTGAAAACTGCAAAAACTTTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3655 AGTGTT------ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAAAAATAGCAACCACTTATGGCACTGTATATATTGTAGACTTGTTTTCT-CTGTTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAAACTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAACACTATAGTGGTGGTGAAAGTCATAATTCTTCATCCTCCAAGACTTTTGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAACGTTATAATTGTGGTGAAGGTCAAGATTCTTCGTCATCCAAGACTTTTGACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAGAAAGAAGTGATGCACAGCTACGTACAAACCAAGA----ACACTAGATTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGACTGTTATACTCTTGAATCCCTGTGGAAATCTA-CATTTGAAGACAACATCACTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2647 CCTCTGCCATACTCTTGAATCTGAGGAATCTACCAGTTGGAAACAACCTCACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3536 AAGGGGAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATAT
                                                              2696
                                                                                                                                                                                       1813
                                                                                                                                                                                                                                                                            1873
                                                                                                                                                 2756
                                                                                                                                                                                                                                    2816
                                                                                                                                                                                                                                                                                                                                                             1933
                                                                                                                                                                                                                                                                                                                                                                                                       2936
                                                                                                                                                                                                                                                                                                                                                                                                                                             1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3176
                                                                                                                                                                                                                                                                                                                       2876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2593
                                                            ò
                                                                                                    q
                                                                                                                                             ò
                                                                                                                                                                              엄
                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                    95
95
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90 A9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DP OX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

2546

ö

Gaps

2606

162

2726

282

2786

342

	GTTGGCACAGTTAATTATATGCCACCAGAAGCAATCAAAGATATGTCTTCCAGAGAG 308 GTTGGCACAGTTAATTATATGCCCACCAGAGCATCAAAGATATGTCTTCCTCCAGAGG 308 GTTGGCACAGTTAATTATATGCCCACCAGAGCATCAAAGTTTTTTTT	7 CITCAGGATGIGITAAAGIGITOTITAAAAGGGACCGAAACAGGGATAICCAITCCI 3326	AC112218 Homo sapiens chromosome 3 clone CTD-2036B16, complete sequence. AC112218 AC112218 AC112218 AC112218 AC112218 AC112218 AC112218.2 GI:21166214 HTG. Homo sapiens Homo sapiens Eukaryote, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Homo sapiens Eukaryote, Metazoa; Chordata; Catarrhini; Hominidae; Homo. I (bases 1 to 144319) Kaul, R.K., Olson, M.V., Zhou, Y., James, R.A., Rouse, G., Wu, Z., Saemphimmachak, C., Phelps, K.A.; Buckley, D., Raymond, C. and Unpublished Unp
2847 2907 2907 2967 523	3027 3087 643 3147 703 3207	3267 823 3327 883	S S S S S S S S S S S S S S S S S S S
	6 6 6 6 6 6 6	9 6 9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	RESULT 12 AC112218 DCCGCS DEFINATION ACCESSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL COMMENT

```
This sequence has been validated by Multiple Complete Digest fingerprinting. Comparison of the experimentally derived digest fingements with sequence-predicted fragments is given below. The electronically-digested sequence consists of both insert and vector, in order to accurately represent the entire circular BAC. Small fragments below a variable cutoff (approximately 400-800 bp) are not resolved in the fingerprint and hence do not appear in the table. There are no significant remaining discrepancies between the experimental and predicted values. Uniquely ordered fragments are separated by dashed lines. HindIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., Phred quality,>= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <800
                                                                                                                                                                                                                                                                                                                                                                                     Sequence Quality Assessment:
This entry has been annotated with sequence quality
estimates computed by the Phrap assembly program.
All manually edited bases have been reduced to quality zero.
Quality levels above 40 are expected to have less than
1 error in 10,000 bp.
Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part
of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SeqDerMap FngrPrnt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8821
Center project name: chr-3

Center clone name: CTD-2036B16 (bc0724)

Center clone name: CTD-2036B16 (bc0724)

Sequencing vector: plasmid; 100% of reads
Sequencing vector: plasmid; 100% of reads
Chemistry: Dye-terminator ET; 57% of reads
Chemistry: Dye-terminator BIP 97% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 144239 bases at least Q40
Consensus quality: 144315 bases at least Q30
Consensus quality: 144319 bases at least Q30
Consensus quality: 144319; sum-of-contigs
Quality coverage: 10.3x in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SeqDerMap FngrPrnt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   746
                                                                                                                                                                                                                                                                                         Overlapping Sequences:
5': CTD-2200P7 (UWGC:bc0739)
3': Mapping in progress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence Validation:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SeqDerMap FngrPrnt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6633
```

Thu Sep 30 10:17:11 2004

/organism="Homo sapiens" /mol_type="genomic DNA"	/db_xref="taxon:9606" /chromosome="1"	/clone = 10="called" by Day Day Day Day Day Day Day Day Day Da	ubclone region"	.isc_feature 144311, .144319 /note="Single subclone	1	ced. No. 4.9e-171;	Matches 925	Qy 4 ATTCTTTTTTTTTTTTTGACATGGACTTTCACTCTTGTGGCCAGGCTGGAGTGCAA 63	では、ウェインの「アルントリー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	29808 IGGCACAATCTCAGCTTACTGCAACCTCCGGGGTTCAAGGGATTCTCCTGCCTC	Qy 124 AGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCCCTGGCTAACTATTTTT 183	Db 29868 AGCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCCCTGGCTAATTTCTT 29923	184 TTCTATTTAGTAGAGATGTGCCCATGTTGGTCAGGCTGGTCTTGAACTCCTGACC 243	29924 ITCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTGACC	Db 29984 TCAGGTGATTCCCTTGCCTTCCCAAGTGCTAGGATTACAGCCGTGAAACTGT 301	#000 101760700000000000000000000000000000	30044 GCCTGGCTGATTCTTTTTTTTTTTTTTTTTTTTTTTTTT	361 AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT 420	AGGCTGGAGTGCAGTGGTGCGATCTTGGCTCATATAACCTCCACCTCCTGGTTTCAAGT	Qy 421 GATICTICCOACTITAGCCTCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCGGG 480	30164 GAICCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACGG	481 CTAATTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA 540	30224 CIAATTITIGIATTITITAGAGACAGGGTTTCACCAIGITGGCCAGGCTGTTCTCAAA	Db 30284 CTCCTGGACTCAAGGCATCCGCCTGCCTCCAAAGTCCCGAAAATTACAAGGTGTG 80343	9	Db 30344 AGTCACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTTCTGGTCCATTTCTTCCTTA 30403	099	30404	OY 720 AAGGAAGATGAAGTGATTTAAGAAGGGGAAGTAGTAAGCAGGCAAGTGCACTCC 779	780 TGGATGATGATCCTAAATCCAGATACAGTAAAATGGGGTATGGGAAGGTAGAATACAAA 839	30523 TGGATGATGATCTAAATCCAGATACAGTAAAATGGGGTATGGGAAGGTAGAATACAAA 30	Qy 840 attiggittaaattaattatctaaatatatctaaaacattitiggatacatigitgaigig 899
3037	2484	9645	1072	<800	994	1189	<800	<800	768	<800	5330	1899	3336	<800	<800	4141	1545	<800	1899	× 800	<800	5330	<800	<800	× 800 6 87		303/ 8 00	<800	1440	2238	7 0 1	
3016	2485	9782	1080	438	066		215	144	785	98	5444	1964	3297	397	510	4087	1586	80 :	1803	160	482	5287	316		714	1 1 0	75	359	1463	2196		-
089	2050	8134	1038	4381	1481	8134	<800	1257	14895	18920	< 800. 4740	806	6259	13333	4381	1794	2050	1794	1575	4381	2620 8581			,						·	•	
117	2023	7990	1044	4449	1507	;	1	1312	15152	18500	199	911	ı w	13666	4387	1786	2040	1789	1629	4201	2645	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									fiers	
4947	8763	8763	<800	1918	2521	2521	2521	5288	1347	2905	4052 9468	3234	<800	7139	<800	970	4947	3744	008	2905	·				٠.						Location/Qualifiers	.144319
4982	8902	8522	50	1904	2541	2531	24	5259	1381	2914	4049 9434	3194	251	7121	1	984	5019	3724	312	0/87											Loc	H
	•		•	•	•	•	•	, 1	,	i		1	•	. 1		1	ı	1	•	1											FEATURES	source

. —								
30583 ATTIGGTTIAAATTAATTATCTAAATATCTAAAAACATTTTGGATACATTGTTGATGGG 30642	900 AATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGG 937 	AC097015 Homo sapiens chromosome 3 clone RP11-82B23, complete AC097015 AC023097 AC097015.2 GI:24431663 HTMC sapiens (human) Homo sapiens (human)			S. Saul, R.K., Olson, M.V., Zhou, Y., James, R.A., Rouse, G., Wu, Z., Saenphimmachak, C., Buckley, D., Kibukawa, M., Raymond, C. and Haugen, B.D. Direct Submission L. Submitted (31-OCT-2002) Genome Center, University of Washington,		Sequencing vector: unknown; 54% of reads Sequencing vector: unknown; 54% of reads Sequencing vector: plasmid; 10872; 46% of reads Chemistry: Dye-terminator E1; 87% of reads Chemistry: Dye-terminator E1; 87% of reads Assembly: program: Phrap; version 0.99319 Consensus quality: 17853 bases at least Q30 Consensus quality: 17853 bases at least Q30 Consensus quality: 178530 bases at least Q30 Consensus quality: 178530 bases at least Q30 Consensus quality: 178530 bases at least Q30 Consensus quality: 178590 bases; sum-of-contigs Quality coverage: 9.9x in Q20 bases; sum-of-contigs	5:: RP11-5017 (UMGC:bc0107) AC096887, 10069-bp overlap 3: CTD-2036B16 (UMGC:bc0724) AC112218, 48985-bp overlap Sequence Quality Assessment: This entry has been annotated with sequence quality estimates computed by the Phrap assembly program. All manually edited bases have been reduced to quality zero. Quality levels above 40 are expected to have less than 1 error in 10,000 bp. Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part of this entry's ASN.1 file.
qq	λ Q Q	RESULT 13 ACO97015 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM	REFERENCE AUTHORS TITLE	JOURNAL REFERENCE AUTHORS TITLE JOURNAL	KEFEKENCE AUTHORS TITLE JOURNAL	COMMENT		

This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., Phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one Ml3 subclone; and the assembly was confirmed by restriction digest.

Sequence Validation:

Sequence Validation:

This sequence has been validated by Multiple Complete Digest fingerprinting. Comparison of the experimentally derived digest fingerprinting. The electronically digested sequence consists of both insert and The electronically digested sequence consists of both insert and vector, in order to accurately respessent the entire dircular BAC. Small fragments below a variable cutoff (approximately 400-800 bp) are not resolved in the fingerprint and hence do not appear in the table. There are no significant remaining discrepancies between the experimental and predicted values. Uniquely ordered fragments are separated by dashed lines.

BallI

	KI		7.7	50	77
eqDerMa	FngrPrnt	qDerMa	FngrPrnt	Мар	FngrPr
1	!		!	1	
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,
869	8814	63	<800	87	8317
	×800	6382	6511	2067	2009
		1		1	
46	<800	51	<800	697	6977
59	9606	. 4	<800	٠ 9	×800
1.4	į	1 6		1 0	, i
282	7317	0 1	4774	V I	3548
1780	17859	16	<800	59	<800
1 6	11872		722	9	2635
036	10364	1 1	4977	1264	1261
: :		1		1	
4.2	×800	9	<800	ru i	1047
3543	3585	278	2825	68	068
333	2324	3624	3695	- 6	8934
11	- 1	13	,	1 (
254	2579	94	866	5180	5210
196	1961	1077	10849	189	2009
1.0	2324	164	<800	2.2	2254
1				1 :	:
414	<800	28	15120	1428	1415
ľ	<800	275	2825	1240	12299
50	5501	ıσ	4079	411	14052
1 -	2917	!	9718	7.	810
13	1115	120	4079	1 9	6977
62	6235	198	2005	63	6360
ıα	1687	44	<800	196	2009
35	24444		3692	1 4	1415
48	14615	318	<800	99	2635
872	B74	14.401	19040	707	<800
•	ř	1 1	>	١ ()

124 AGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCCCTGGCTAATTTCTT 183	159789 GATCCTCCCCA 481 CTAATTTTTG 159849 CTAATTTTTTG 159909 CTCCTGGACT 601 AGTCACCATG 159969 AGTCACCATG 160029 AGGTCCTCAG 720 AAGGAAGATG 160088 AAGGAAGATG	TGGATGATGATGATCCTAAATCCAGATACAATATGGGGTATGGGGTATGGAGTATGAAATTCGGATGATGATGATGATGATGATGATGATGATGATGATGAT
E 8 8 9 9 9 11 11 9 8 9 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8934 810 2421 8317 2635 4186 1568 1937 1774	13356 . Gaps 5; rrgcaA 63
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8735 8735 8726 8727 8747 8747 8747 8747 8747 8747 8747	Location/Qualifiers 1. 178596 1. 178596 Anganism=Homo sapiens"
2324 1778 1778 2605 2605 1055 22111 1414	<pre><800 2825 6511 6511 6800 <800 5189 19040 <800 <800 <800 <800 <800 <800 <800 <</pre>	1518 4079 4079 C library gion" DB 9; 9e-17; S CACTCTTG1 CACTCTTTG1 CACTCTTG1 CACTCTTTG1 CACTCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
2	2959 2959 2959 2959 2959 2959 2959 2959	Location/Qualifiers 1.0.78596 Organism="Homo sapiens" Auxerie="Renomic DNA" Auxerie=
 6 800 7 7 4 0 7 4 0 8 0 0 8 0 0 8 0 0 7 0 7 0 8 0 0 8 0 0 9 6 8 8 0 0 9 6 8 9 7 8 9 8 9 8 9 9 8 9 9 8 9 10 9 9 10 9<td>9351 4031 1344 5244 44</td><td>Location/Qualifiers 1.178596 Organism="Homo sap, </td>	9351 4031 1344 5244 44	Location/Qualifiers 1.178596 Organism="Homo sap,
2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ES ource isc_feat Local & hes 928 159373
		FEATURES SOU MIS ORIGIN Query Best L Matche QY Db 1 ON 1

```
aaraaarcacaagagarracargaacrgcriraggacrccagrrgraaaacgaaccra 1494
                                                         TTGAAAGCAATCCATGACCTAGATGAAGCACGGGAGCAGTTCCAGTTTGCAAGACTAAAC
                                                                                                  TGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTAAT
                                                                                                                                                                                                                                                                        ATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGAG
                                                                                                                                                                                                                                                                                                                 ATGTTGAACTTGGCTTTGAAGAATGTACAGTTTAAGAAGCCTCAGCTGATATCTGACGAA
                                                                                                                                                                                                                                                                                                                                                               GAAAAGAAGTTTATCAGCATC-TACGGTATTAACTGCCCAAGAATCATTTTCCGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1686 AAAGCCAGGTTTTTATATGGAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAAACCGTTACT - - TAACATGTCTGCTAAGACCTGTCCTTTGGGCAGAGTGCCTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACCTTCTAAATAGCCCAGAT - - TGTGATGTGAAGACAGATGATTCAGTTGTACCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1863 ITTATGAAAAGACAAACCTCTAGAATGCCGAGATTTTGGTTGTGCCTGGATCTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAAGTGGAAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATATTTGGGAGATGATCTGCATTGCTCAGAAGACATTAAGGTACCAAGCAGCAACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1015 CTACCACATGAAGAACAGGCTAATGAAGACAGCTTAGATATGAAGACACGGTCCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1135 AGCACGTCTACAGCTGTTCTCAATCCTCAAGAAACAGTAAACCATCTGAATCAGCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACTTTTACCCAACATTAATGCAAGGCTCTCTGACACGACCAAGCCAAACAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATACAGAGCAGAAACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAACA--G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1315 TTTCCAGCGGGTAAAAAAAAGAGTACTGAGCCTAGTGCTAATCCTGGTTCCCGACGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCACCACCAATATCAACATCTAAATGGTTTGACCCCAAAATCTATTTGTAAGACACCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAATACCTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACTTT
                                                                                                                                       recaaaaagririecririrgiecaracaecririrecccaarrireaecrercaeaegaaaar
                                                                                                                                                                                   GTCAAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAA
                                                                                                                                                                                                                          rrrahahahderdrahderrerredahdererredahrerdeeterdreeterah
                                                                                                                                                                                                                                                                                                                                                                                                       ACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATT-----CCAGAGGACAGACTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTTGGCACTGGGAAATCCACAACGAATGAAGATCGAAAGCCCCAGAAGAATATTCTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAACAAGATTTTCATATGGAGAAAGTTAAGCTCCCCAGAAGACTTTGAAGATATAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTCATTGAGACAAACTAAACTAAACAGTCATGCCCCATTTGGAAGAGTCCCCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         835 CAACCAGCAACATCTCCAGATACAAGAACAAGGAAGAGTGATGACGCTCTGGCAGTTCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gridadadadecárreagirecargegrerecergicerárecirgeracrireredadareca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGAACCTCTGGTGTCAGATGAAAGAGTTCTGAACTTATTATTACTGATTCAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAAGAATAAAACGGAATCAAGTCTTCTAGCTAAATTAGAAGAA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ------ACTAAAGAGTATCAAGAACCAGAGGTTCCAGAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2124 AACCAGAAACAGTGGCAAGCTAAGAGAAAGTCAGAGTGTATTAACCAGAATCCTGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1375 rerececciaecaecerereriagraaargaaecergrerrigirigiggaaeaekeagee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2184 TCTTCAAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTT----
                                                                                                                                                                                        1452
                                                                                                                                                                                                                                                                          1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1435
                                                                                                  1392
                                                                                                                                              418
                                                                                                                                                                                                                               478
                                                                                                                                                                                                                                                                                                                      538
                                                                                                                                                                                                                                                                                                                                                               1572
                                                                                                                                                                                                                                                                                                                                                                                                         598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   955
                                                           358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                  ò
                                                                                                                                   g
                                                                                                                                                                                 ò
                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                               \dot{\circ}
                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \overset{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NNRSDYQQPQTPVGQPDCFPISAPFASSDCITVVGGRAYAVLKQIGFGGSSKVFQWDD
KRCHYANKYNLEEADQQTTBSYQNESTSHLMKLQQDCDKITRLEPDYETTWWNE
CGNIDLATWARKKYTIPPWERKSYWRMLEAYHTHQHGIVHSDLKPANFLITOGHK
LIDFGIANQIQPDVTSIVKDSQVGTINYMPPESIRDTTSYAENGKPRSKISPKGDVWS
ERGILKYGMYPYGKTPFGHITNQLAKLHSILDPGYRIEPPNIPEKDLQDVLRKCIVRNPK
ERSISLAELLVHPYYQQPPTQPDQQVQKETTEBMKRILGQLIGLNSPNSISRAKNLY
DQFNSGRSLDLSTLGTTVSQNTRTTK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/product="Mps1/TTK"
/protein_id="MAK27843.1"
/db_xref="G13491131"
/translation="MDDEDISERKLKIASILDRVKSPKTKYGTDDNWTDELTFSKSSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DTTEHSGI FTHLVTTXTPEEWLNCLLXLENTGLPQIDPQLLNKL IDNYSQAVGALPAE
KHSHNESYAKILVHFAELKA IHDLDEAREQFQFARLNCXKFAFVHTAFAQFELSEGNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KKCKQILRRGLECGAVPCEMLNLALKNVQFKKPQLISDEDKENLAVSSSHINQGTASF
QNLALGNPQRMKIESPEEYSVKTRFSYGEKLSSPEDFEDIGRKPLLNMSAKTCPLGRV
PVQPATSPDTRTRKSDGSGSSSVVKRPFSSMRVPVLATLSNPKYLGDDLHCSEDIKVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSNILPHEEQANEDSLDMKTPSSVILSVTESNLTVKRNEDLILGSTSTAVLNPQENSK
PSESAPPLLPNINARLSDTTKPNNIEAEWKWKVPETPRQIFQPEMIFPAGKRKSTEPS
ANPGSRRVSPPAPSLSKCDPVFVCGTPVNKSQEDYMNCFRTPVVKTNLGPLAQMSTPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAA 1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        978 ATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1038 AGAGACATTAAAAATAAGTTTAAAAATGAAGACCTT---ACTGATGAACTAAGCTTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAAAGAGTGTTCCGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTGATGC - - - TCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGACCCACAACTICTCAATAAGCTCATTGATAATTACAGTCAAGCTGTTGGAGCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cececadaaaaacacagreacaardaaaagerargeraaaareerrgreacrrrreceaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGTCTTCTGCTGACACTACAGAGCACTCTGGCATTTTTACCCA---CTTGGTGACCACA
                                                                                                                                                                                     Magnaghi-Jaulin,L., Vigneron,S., Lorca,T. and Labbe,J.C. X-Mps1/TTK is a novel Xenopus protein required for the spindle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGATGATGAGATATAAGTGAACGGAAACTGAAATTGCTTCTATCTTGGATAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93;
                                                                                                                                                                                                                                                                                                                                           CNRS, 1919 route de Mende,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2649;
mps1 is a kinetochore-associated kinase essential for vertebrate mitotic checkpoint Cell 106 (1), 83-93 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                               Unpublished
3 (bases 1 to 2649)
Magnaghi-Jaulin,L., Vigneron,S., Lorca,T.
Direct Submission
Submitted (29-MAR-2000) CRBM, CNRS, 1919 r
Montpellier cedex 34293, France
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 793.8; DB 5;
Pred. No. 2.6e-156;
0; Mismatches 947;
                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Xenopus laevis"
/mol_type="mRNA"
/db_xref="taxon:8355"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20.5%;
                                                                                                                                                                 (bases 1 to 2649)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                            11461704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Simil
Matches 1575; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298
                                                                                                                       MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                   JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
```

g ò g Вþ

े

임 ò 셤

ò

 δ

ò

1982

1922

954

1862

1745

1805

8 6 B

6 B 6

```
CCCAAGTAGCTGGGATTACAGGCATGTGCCAACATGCCCCAGCTAATTGTGTATTTTTTT 129370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rearcescencerrescenceda a ser se contra a contra de cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             riarrirarririccacacacacarricacrerarracacacacacacacacaracan 129490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129310
                                                                                                                                                                                                           PRI 22-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 180510)
DOE Joint Genome Institute.
Direct Submission
Submitted (03-FEB-2000) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
3 (bases 1 to 180510)
DOE Joint Genome Institute and Stanford Human Genome Center.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309 TGATICITITITIGIIGIIGGAITITIGAAACAGGGICICCCIIGGICGCCCAGGCIGGA 368
                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

1 (bases 1 to 180510)

DOS Joint Genome Institute and Stanford Human Genome Center.

Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (22-DEC-2000) DOE Joint Genome Institute, 2800 Mitchell
Bubmitted (22-DEC-2000) DOE Joint Genome Institute, 2800 Mitchell
On Dec 22, 2000 this sequence version replaced gi:7704995.

Draft Sequence Produced by DOE Joint Genome Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89
                                                                                                                                                                                     AC022415 180510 bp DNA linear PRI 22-DEC.
Homo sapiens chromosome 19 clone CTC-359D24, complete sequence.
AC022415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTGTGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTGCAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITAGIAGAGAIGGGGITICACCAIGTIGGICAGGCIGGICITGAACICCIGACCICAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tripariadadadadegerircrecardrigresidadecresinariosadriccesacereas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGCCTCAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 418; DB 9; Length 180510;
Pred. No. 1.8e-77;
0; Mismatches 115; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            www.jgi.doe.gov
Frinishing Completed at Stanford Human Genome Center
www.shgc.stanford.edu
Quality: Phrap Quality >=40 99.9% of Sequence;
Estimated Total Number of Errors is 0.1.
3477 GAACACTATAGTGGTGGTGAAAGTCATAATTCTTC 3511
                                                     2569 darcagiriaacagiggeagaagagceiggaicigie 2603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1. 180510
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db xref="taxon:9606"
/chromosome="19"
/clone="CTC-359D24"
                                                                                                                                                                                                                                                                                                 AC022415.5 GI:11968305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 81.1%;
Matches 498; Conservative
                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STS Content:
SHGC-6150 G14148.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 129549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         129429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129309
                                                                                                                                              RESULT 15
AC022415/C
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                  g
à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                         2642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2148
                                                                                                                                                                                                                                                                                                                       GACTGTATTGTAGTTAAAGGACGTGCATATGCAGTTTTAAAACAAATTGGAACAGGTGGA 1668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACACAATACATCAGCATGGGATTGTACACAGTGACTTGAAGCCAGCAAACTTTCTAATT 2028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGATATGTCTTCCTCCAGAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCCAAAAGT 3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATATTACAAATCAGATTGCTAAACTTCAATTCTGGATCCTGGTTATGAAATAGAG 2328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITCCCGATAITCCAGAGAAAGAICTTCAAGAIGIGTTTAAAAGIGTTTAAAAAGGGAC 3302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3417 GGCCAACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATAT 3476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGACCATTGGCACAAATGTCCACACCCTACAACAGCGTTCAGATTATCAGCAACCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                      a a ca a a cinca gea de crerea e a a cantra e a cinca rea e contra e a cantra e a cantra e a cantra e a cantra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAAGACTATTAATCCTTGGGAACGAAAGAGCTACTGGAAAAATATGCTTGAAGCGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGTCTGGTCTCTGGGTTGCATATTGTACTGCATGACATATGGGAAGACTCCTTTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCCCTAATATATACCAGAGAAAAGACCTTCAAGATGTACTAAGGAAATGTTTAGTACGAAT
                            CATCAAATACTTGCCACTCCACTTCAAAATTTACAGGTTTTAGCATCTTCAGCAAAT
                                                                                                                                                                                                           ACCCCAGTTGGA-----CAACCGGACTGTTTTCCAATCTCTGCACCTTTTGCATCAAGT
                                                                                                                                                                                                                                                                                                                                                                                         TCAAGCAAGGTATTTCAGGTGTTAAATGAAAAGAAACAGATATATGCTATAAAATATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTTAGAAGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATCTCGAAGAAGCTGACCAGCAGACCATAGAAAGCTATCAGAATGAAATTTCTCACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGGTTGGCTTAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cadcanannacandenandeadrendeaananacanceanachrecenadeaad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGATGGAATGCTAAAGCTAATTGATTTTTGGGATTGCAAACCAAATGCAAGCCAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCATTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAAT-----T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAACTCATCCAGTTAACCAAATGGCCCAAGGGAACCACTGAAGAAATGAAATATGTTCTG
                                                                                                                                                                                                                                                                    GAATGCATTTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATAAACTACAACACAGGGGGTGATAAGATCATCCGACTTTATGATTATGAAATCACGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGATACCACCTCATATGCGGAAAATGGCAAACCCAGATCAAAGATTAGCCCAAAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTAAGGAAAGGATATCCATTGCTGAGCTCCTTGTGCACCCATATGTTCAGATACAGCT
                                                                                                                                                                                                           1555
                                                                                     1495
                                                                                                                                              2463
                                                                                                                                                                                                                                                                    2523
                                                                                                                                                                                                                                                                                                                             1609
                                                                                                                                                                                                                                                                                                                                                                                         2583
                                                                                                                                                                                                                                                                                                                                                                                                                                               1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2389
```

B & B

8 8 8

a y

oy Oy

90 A0

80 %

ò

	369 GTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGTGATCCTCC 428	129189 GTGCAGTGACGCGATCTCGGCCCACTGTAACCTCTACCTCCTGGGTTCAAGTAATTCTCC 129130	429 CACTITAGCCTCCTGAGTAGTGTGATTACAGGCGTGCACCACACCACACCGGCTAATTTT 488	129129 TACCTCAGGCTCCCGAGTAGCTGGGACTACAGGCACCCACC	489 IGTATITITATIAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAACTCCTGGA 548	129069 TATATTTTAGTAGGGAC-GGGTTTCTCCATGTTGGCCAGGCTGGTCTCAAACTCCTGAC 129011	549 CICAAGGGAICCGCCIGCCTCCACIICCCAAAGICCCGAGAITACAGGIGIGIGAGICACCA 608	129010 CTCAAGTGATCTGCCTGCCTCACCCTCCCAAAGTGCTGGGATTACAGGGGTGAGCCACCG 128951	609 TGCCTGACCTTATA 622	128950 CGACTGGCCAAAGA 128937	Search completed: September 30, 2004, 06:35:00
Db 13	δλ	Db 13	δλ	Db 1.	ζ	Db 1.	λ ₀	Db 13	δλ	. qa	Search completed:

This Page Blank (uspto)

```
September 30, 2004, 01:57:15; Search time 3882 Seconds (without alignments) 5048.672 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                               1 ggaattootttttttttttt......aagttttgtggotaaaatga 3866
                    1: /cgn2_6/ppt.act.ons_Nai;

2: /cgn2_6/pt.odata/1/pubpna/PCT_NEW_PUB.seq:*

3: /cgn2_6/pt.odata/1/pubpna/PCT_NEW_PUB.seq:*

3: /cgn2_6/pt.odata/1/pubpna/USO6_NEW_PUB.seq:*

5: /cgn2_6/pt.odata/1/pubpna/USO6_NEW_PUB.seq:*

5: /cgn2_6/pt.odata/1/pubpna/USO7_NEW_PUB.seq:*

6: /cgn2_6/pt.odata/1/pubpna/DSO7_NEW_PUB.seq:*

6: /cgn2_6/pt.odata/1/pubpna/USO8_PUBCOMS.seq:*

7: /cgn2_6/pt.odata/1/pubpna/USO8_PUBCOMS.seq:*

8: /cgn2_6/pt.odata/1/pubpna/USO8_PUBCOMB.seq:*

10: /cgn2_6/pt.odata/1/pubpna/USO8_PUBCOMB.seq:*

11: /cgn2_6/pt.odata/1/pubpna/USO9_NEW_PUB.seq:*

12: /cgn2_6/pt.odata/1/pubpna/USO9_NEW_PUB.seq:*

13: /cgn2_6/pt.odata/1/pubpna/USO9_NEW_PUB.seq:*

14: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

15: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

16: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

17: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

18: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

19: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

19: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*

19: /cgn2_6/pt.odata/1/pubpna/USO0_NEW_PUB.seq:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3340653 seqs, 2534783454 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Published_Applications_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Listing first 45 summaries
                                                                                                                             - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                             US-10-081-119-13
3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                             OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                   Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Sequence 110237,	Sequence 160, App				a)	Sequence 314, App	۵J		a)	Sequence 5, Appli		Sequence 1516, Ap	Sequence 5702, Ap		6, App	100	101	17	623	ω ω	1753	1754	4,	136	64.				Sequence 814, App	
US-10-027-632-11	US-09-997	US-10-087-192-62	US-10-087-192-70	09-835-	US-09-973-278-90	10	US-09-960-106-96	-764-887-33	US-10-073-961	US-10-277-216-5	US-10-126-022	US-10-087-192-151	US-10-741-601-57	US-09-880-107-1542	US-10-271-416		US-10-205-428-1	US-10-087-192-179	US-10-116-712-62	US-10-694-68	-175	-09-764-8	US-10-316-231	US-10-087-	US-10-116-712-64	US-10-322-281-314	US-10-087-19	. US-10-741-601-57	US-10-087-192-	US-10-322-281-17
-1	e#	-	7	0		24 9			Н			Н	Н		Н	18 10	-	Н	Н	г	41 9		Н	Н			18 1	99	25 13	72 1
		16	ø	ιΩ											22693												1423	413	597	264
10.4	10.2	0	0	0	0	10.0	0	0	10.0	0	10.0	10.0	9.	9.	9.9	9.	9.	ο.	9.	9	9.0	9.6	9.6	9.6	9.6	9.8	9.8	9.8	9.8	9.8
402		95	90	9	87	385.6	85	85	85	85	85	84	384	384	N	382.2	\sim	382	œ	ထ	380.4	380.4	ထ	80.		380	379.6	79.	37	378.8
15	16	17	18	10	50	21	22	23	24	25	56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
	υ		υ	υ						υ	U		υ		υ	υ	υ		U			υ		υ	U	υ	υ			U
				•																	,									

ALIGNMENTS

```
Sequence 148, Application US/09967768A

Sequence 148, Application US/09967768A

Satisfied No. US2002015087741

APPLICANT: Augustus, Meena
TITLE OF INVENTION: Sets
TITLE OF INVENTION: Sets
TITLE OF INVENTION: Sets
FILE REFERENCE: 689290-72

CURRENT APPLICATION NUMBER: US/09/967,768A

CURRENT APPLICATION NUMBER: US/60/236,109

PRIOR FILING DATE: 2000-09-28

NUMBER OF SEQ ID NOS: 325

NUMBER OF SEQ ID NOS: 325

SOFTWARE: Patentin version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GGAATTCCTTTTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GGAATICCTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 3866;
100.0%; Pred. No. 0;
iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.
Matches 3866; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Homo sapiens
US-09-967-768A-148
US-09-967-768A-148
                                                                                                                                                                                                                                                                                                                                                                                                 SEÇ ID NO 148
LENGTH: 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
```

	281 AGTCACCACCATATCAACATCTAAATGGTTTGACCAAAATCTATTTGTAAGACCAA 2
3 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6	G & .
121 CTCACCTCTCACATACTOGOSTITACAGGCATCACCACCCCCCTGCTACTACTTTT 150 121 CTTCACCTCTCACAGTAGTTGGCTTCACACCCCCCCCCC	atgatgatggcaaaccaagaactggttgatttgttgttgttcttaactagt agtgttccgctaagtgatgctcttttaaataaattgattg

3660 3720

3780

```
TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCTTCCAAGCGATTCTCTGC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Linsley, Peter S.
APPLICANT: Mao Mao
APPLICANT: Mao Mao
APPLICANT: Roberts, Christopher J.
APPLICANT: Wan 't Veer, Laura Johanna
APPLICANT: Van de Vijver, Marc J.
APPLICANT: Bernards, Rene
FILE REFERENCE: 9301-188-999
CURRENC FILING DATE: 2001-115
PRIOR FILING DATE: 2003-01-15
PRIOR APPLICATION NUMBER: 60/298,918
PRIOR FILING DATE: 2002-05-14
PRIOR FILING DATE: 2002-05-14
NUMBER OF SEQ ID NOS: 2699
SED ID NO 899
LENGTH: 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATGGCACTGTATATATATGTAGACTTGTTTTTCTCTGTTTTTATGCTCTTGTAATCTAC
                                      3421 AACTIGITGGICTGAATICTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                  GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATTTGGACT
                                                                                                                                                  3601 GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                        ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTTG
                                                                                                                                                                                              GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                              Transscattstarararaterasactrentrercreterraratererratera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .,
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 13; Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3866; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           TIGIGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3841 TAAATAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Sequence 899, Application US/10342887; Publication No. US20040058340A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Dai, Hongyue
APPLICANT: He, Yudong
APPLICANT: Linslley, Peter S.
APPLICANT: Mao, Mao
APPLICANT: Roberts, Christopher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , ORGANISM: Homo sapiens
US-10-342-887-899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
US-10-342-887-899
                                                                                                                                                                                                                                                                                                                                                                                                                                          3841
              3421
                                                                                                                                    3541
                                                                                                                                                               3541
                                                                                                                                                                                              3601
                                                                                                                                                                                                                                                        3661
                                                                                                                                                                                                                                                                                                                    3721
                                                                                                                                                                                                                                                                                                                                                 3721
                                                                                                                                                                                                                                                                                                                                                                                3781
                                                                                                                                                                                                                                                                                                                                                                                                             3781
                                                                        3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                         ద
                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                     임
                                                                        8
                                                                                                B
                                                                                                                             ò
                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                        2460
                                                                                                                                                                                                                                                                        2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3420
                                                                                                                     2460
                                                                                                                                                  2520
                                                                                                                                                                                                             2580
                                                                                                                                                                                                                                           2580
                                                                                                                                                                                                                                                                                                     2640
                                                                                                                                                                                                                                                                                                                                  2700
                                                                                                                                                                                                                                                                                                                                                               2700
                                                                                                                                                                                                                                                                                                                                                                                                2760
                                                                                                                                                                                                                                                                                                                                                                                                                           2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2941 TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATTATGCCACCAGAAGCAA 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAA 3360
AGTCACCACCATATCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACACCAA 2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2761 ACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAAA
                                                                                                                                                                            2461 AGCATCAAATACTTGCCACTCCACTTCAAAATTTACAGGTTTTAGCATCTTCTTCAGCAA
                                                                                                                                                                                                                                        ATGAATGCATTTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG
                                                                                                                                                                                                                                                                        GTTCAAGCAAGGTATTTCAGGTGTTAAATGAAAAGAAACAGATATATGCTATAAAATATG
                                                                                                                                                                                                                                                                                            GTTCAAGGAAGGTATTTCAGGTGTTAAATGAAAAGAAACAGATATATGCTATAAAATATG
                                                                                                                                                                                                                                                                                                                                    TGAACTTAGAAGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTATT
                                                                                                                                                                                                                                                                                                                                                         2641 TGAACTTAGAAGAAGAAGAAACCAAAACCCTTGATAGTTACTGGAACGAAAGAATAGCTTATT
                                                                                                                                                                                                                                                                                                                                                                                              TGAATAAACTACAACAACACAGTGATAAGATCATCCGACTTTATGATTATGAAATCACG
                                                                                                                                                                                                                                                                                                                                                                                                                  2701 TGAATAAACTACAACAACACAGTGATAAGATCATCCGACTTTATGATTATGAAATCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TICACACAATCCATCAACATGCCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCACACAATCCATCAACATGCCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGTTGATGGAATGCTAAAGCTAATTGATTTTTGGGATTGCAAACCAAATGCAACCAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCAAAGATATGTCTTCCTCCAGAGAATGGGGAAATCTAAGTCAAAGATAAGCCCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAAAGATATGTCTTCCTCCAGAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIGALGITIGGICCTIAGGALGIATITIGIACIATAIGACITACGGGAAAACACATITIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTTCCCGATATTCCAGAGAAGATCTTCAAGATGTGTTAAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATATGTTCTGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      crcarccagrraaccaarggccaagggaaccacrgaagaaargaaarararcreggcc
                                                          GCAGCAATACCTTGGATGACATGAGCTGTTTTAGAACTCCCAGTTGTAAAGAATGACT
                                                                                        AGCATCAAATACTTGCCACTCCACTTCAAAATTTACAGGTTTTAGCATCTTCAGCAA
                                                                                                                                                                                                           ATGAATGCATTTCGGTTAAAGGAAGAATTTTATTCCATATTAAAGCAGATAGGAAGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAAA
                             GCAGCAATACCTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACT
2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3241
                                                          2341
                                                                                                                    2401
                                                                                                                                                  2461
                                                                                                                                                                                                                                                                        2581
                                                                                                                                                                                                                                                                                                     2581
                                                                                                                                                                                                                                                                                                                                    2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3301
                           2341
                                                                                       2401
                                                                                                                                                                                                             2521
                                                                                                                                                                                                                                           2521
                                                                                                                                                                                                                                                                                                                                                                                                2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3361
                                                                                                                                                                       g
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            के वि के
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                           ò
                                                        В
                                                                                     ò
                                                                                                             d
                                                                                                                                         ò
                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                          ga vo
                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                           ò
```

0	RESULT 198-899 // Sequence 899, Application US/10172118 // APPLICANT: Dai, Hongvue // APPLICANT: Dai, Hongvue // APPLICANT: Boi, Moo, Mac // APPLICANT: Roberts, Chris // APPLICANT: Wan de Vijver, Marc // PRIOR APPLICANT: WAN
2281 AGTCACCACCATATCACATCTTAATGGTTTGACCCAAATCTATTGTAAGACACCAA 2340 2281 AGTCACCACCAATATCAACATCTTAATGGTTTGACCCAAAATCTATTGTAAGACACCCAA 2340 2281 GCAGCAATACCTTGACATCTTAATGGTTTTAGAACTCCAGTTGTAAAGAACACCCAA 2340 2341 GCAGCAATACCTTGGATGATTACATGACTTTTAGAACTCCAGTTGTAAAGAATGACT 2400 2401 TTCCACCTGGTTGTCAATACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACT 2400 2401 TTCCACCTGGTTGTCAACACCCTTATGGCCAACCTGCTGTTTCCAGCAGCAAC 2460 2401 TTCCACTGGTTGTCAGTTGTCAAACACTTATGGCCAACCTGCTGTTTCCAGCAGCAAC 2460 2401 TTCCACTGGTTGTCAGTTGTCAAAAATTTACAGGTTTTAGCATTTCCAGCAGCAAC 2520 2461 AGCATCAAATACTTGGCTAAAAAAAAAAAAATTTACAGGTTTTAAGCAATTTCCAGCAAA 2520 2521 ATGAATGCATTTCGGTTAAAAGAAAATTTAATCCATATTAAAGCAAATAAGGAAAAGAAAAATTTACAAAAAAAA	2821 AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATGTTAGAGGCAG 2880 2821 AGAAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAG 2880 2821 TTCACACAATCCATTGATCCATGGCATTGTTCACAGTGATCTTAGAGGCAG 2880 2881 TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAGAACATTTTGA 2940 2941 TACACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGGTAACTTTTTGA 2940 2941 TAGTTGATGGAATGCTAAAAGTTATTTGGATTATTATATGCCACCAGAACCAA 3000 3001 CAACAAGTTGTTAAAAGTTTTTGATTATTTTAAATATGCCACCAGAACCAA 3000 3001 CAACAAGTTGTTAAAAGTTTTGATTTTTGAATAATTATATGCCACCAGAACCAA 3060 3001 CAACAAGTTGTTAAAAGTTTTTGATTATTATATATATGCCACCAGAACCAA 3060 3001 CAACAAGTTGTTAAAAGTTTTTGATTATTATATATATATGCACCCAAAA 3120 3121 GTGATGTTTGATTATATATATATATATATATATATATAT

12 CATTORICA CANTERCA CANTERCA CONTINUED 120	1141 TTATGATGATGGCAAACAACCGGGGGCTTGATTGTTGTTGCTCAAACTAGAGAAAA 1 	1201 ACAGIGITCCGCIAAGIGAIGCICTITIAAATAAATIGAITGGICGTIACAGICAAA 1 	1261 TTGAAGGGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA 1 	1321 GATTIGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGGTGGCGGGACTACTTCAAATGG 1 1321 GATTIGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTATTCAAATGG 1	1381 CCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGT 1 1381 CCAGAGCAAACTGCCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGT 1	1441 CACAAGGTAATGTCAAAAAGTAAACAACTTCTTCAAAAAGGTGTAGAACGTGGAGCAG 1 		1561 TTTCAGAGGAGGAAAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCAT 1 	1621 TTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGA 1		1741 ACCGGAATTCATTGAGACAAACTAACAAACTAAACAGTCATGCCCATTTGGAAGAGTCC 1	1801 CAGTTAACCTTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTT 1 	1861 GTTTATGAAAAGACAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTA 1	aaccaagtggaaatgattcctgtgaattaagaaatttaaagtctgttcaaaatagtcatt 	1981 TCAAGGAACCTCTGGTGTCAGATGAAAAGAGTTCTGAACTTATTATTACTGATTCAATA 2 	2041 CCCTGAAGAATAAAACGGAATCAAGTCTTCTAGCTAAATTAGAAGAAACTAAAGATATC 2	2101 AAGAACCAGAGGTTCCAGAGAGTAACCAGAAACAGTGGCAAGCTAAGAGAAAGTCAGAGT 2 	GTATTAACAGAATCCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCCCGAA	2161 GTATTRACCAGAATCCTGCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCCGAA 2 2221 AAGTTAATACAGAGCAGAAACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAAC 2
6. CANTOGORICANICTICACTINACTICACCICCOCCICCOCCONTICALICICITICS (1) 12. CTCAGCCTCTCAACTICACTINACTICACACACTICACCCCTCCCCCCCTCCCTTAATT 180 12. CTCAGCCTCTCAACTICACTICACTICACCTCCCCCCCCCC	λο -	oy da	Oy Op	oy ea	₹ 6	δ q ₂	QY Db	ò A	Qy Dp	음 당	상 음	<i>상</i> 옵	S G	QQ QD	S S	dg dg	Q A	ð i	o, o
	61 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC	121 CTCAGCTCTCAGCTGACTTACAGGCATCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC 121 CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCCCTGGCTAATTT 121 CTCAGCCTCTCAAGTAGTAGTGTGTTTACAGGATTACAGGATTACAGGAATTACAGGAAATTT	181 CITICIAITIAGIAGAGAIGGGGITTCACCAIGITGGTCAGGCIGGTCITGAACTCCTG	241 ACCTCAGGTGATCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAACTG [301 TGCCTGGCTGATTCTTTTTTGTTGTTGTTGTTGAAACAGGGTCTCCCTTGGTCGCCCCTGGTCGCCCTTGGTCGCCCCTGGTCGCCCCTTGGTTGGTTGAAAAAGAGGGTCTCCCTTGGTCGCCCCGCCCCCTGGTTGTTGAAAAAGAGGGTCTCCCTTGGTTGG	361 AGGCTGAAGTGCAGTGGGGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT 	421 GATCÓTCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCACGG 48	481 CTAATTTTTGTATTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAA 	541 CTCCTGGACTCCAGGGGTCGCCTCCAAAGTCCCAAAGTTACAGGTGTG [601 AGTCACCATGCCTTATAATTCTTAAGTCATTTTTCTGGTCCATTTCTTCTTAG 6 1	661 GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA	721 AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACTCCT 78	781 GGATGATGATCTAAATCCAGATACAGTAAAAATGGGGGAAGGTAGAAAAA GGAAGGAAGGAAG	841 TITGGTTTAAATTAATTACTAAAAACATTTTTGAATACATTGTTGATGAATACATTTTTGATGAATACATTGATGAATACATTGATGAATACATTTTTGAATACATTGATGAATACATTTTTGAATACATTGATGAATACATTGATGATGAATACATTGATGATGAATACTAAAAAAATTTTTGGATACATTGATGAATACATAC	901 AIGTAAGACTGTACAGCTTCCTAGAAAACAGTTTGGGTTCCATCTTTCATTTCCCAG 	961 TGCAGTTTTCTGTAGAATGGAATCCGAGGATTTAAGTGCCAGAAATTGACAATTGATT 102. 961 TGCAGTTTTCTGTAGAATGGAATCCGAGGATTTAAGTGCCAGAAATTGACAATTGATT 102.	1021 CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG 108	1021 CCTIVATIGAACAAAGIGAGAGAGACATIAAAAATTAAAAAATTAAAAAATGAAAATGAAAGTGAAGTGATAAAGAAA 114	1081 AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA 114


```
3540
                                                                                                                                                                                                                                                      3600
                                                                                                                                                                                                                                                                                       3660
                                                                                                                                                                                                                                                                                                                                                    3720
                                                                                                                          3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TIGACATCATITIACTCTIGGAATAGIGGGIGGATAGCAAGIAIATICTAAAAAACTITG 3840
                                                                                                                                                                                                                                                                                                                                                                                    3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                   3421 AACTIGITIGITIGITIGITIGITIGITIGIAAGCIGCIAAACTITATATGAAC
                                                                                                                                                                           3721 ITATGGCACTGTATATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                3601 GITATACTCITICAATCCCIGIGGAATCTACATTIGAAGACAACATCACTCTGAAGIGIT
                                                                                                                                                                                                                                                                                                                                                  ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                     TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GGAATTCCTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                           CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATATGTTCTGGGCC
                                                                                           AACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                       GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-119-13

i Sequence 13, Application US/10081119
; Sequence 13, Application US/10081119
; Publication No. US20030045491A1
; GENERAL INFORMATION:
; APPLICANT: Reinhard, Christoph
; APPLICANT: Offerson, Anne B.
APPLICANT: Chan, Vivien W.
; TITLE OF INVENTION: TTK in Diagnosis and as if TITLE OF INVENTION: TTK in Diagnosis and if TITLE OF INVENTION: TEXT in Diagnosis and if TITLE OF INVENTION: TEXT in Cancer
; TITLE OF INVENTION: 16932.002
; CURRENT FILING DATE: 2002-02-21
; PRIOR APPLICATION NUMBER: 60/289,813
; RIGHER OF SEQ ID NOS: 38
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%; Score 3866; Best Local Similarity 100.0%; Pred. No. 0; Matches 3866; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1026)...(3551)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (1026)...(355
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   , OTHER INFORMATION: TTK US-10-081-119-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 3866
                                                                                                                                                                                                                                                                                       3601
 3301
                                3361
                                                               3361
                                                                                             3421
                                                                                                                                                          3481
                                                                                                                                                                                                                         3541
                                                                                                                                                                                                                                                                                                                                                       3661
                                                                                                                                                                                                                                                                                                                                                                                                                     3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION:
                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                 Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                           ò
                                                                                                                        g
                                                                                                                                                                                      셤
                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                              ò
                                                        g
                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAATTG 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCATCCTAATCATGAAATTG 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATACTTCAAATTCAAA 3360
                                                                                                              2400
                                                                                                                                             2400
                                                                                                                                                                           2460
                                                                                                                                                                                                            2460
                                                                                                                                                                                                                                          2520
                                                                                                                                                                                                                                                                         2520
                                                                                                                                                                                                                                                                                                          2580
                                                                                                                                                                                                                                                                                                                                      2580
                                                                                                                                                                                                                                                                                                                                                                       2640
                                                                                                                                                                                                                                                                                                                                                                                                       2640
                                                                                                                                                                                                                                                                                                                                                                                                                                      2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGTIGATGGAATGCTAAAGCTAATIGATTITGGGATTGCAAACCAAATGCAACCAGATA 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAA 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIGAIGITIGGICCTIAGGAIGIAITITIGIACIAIAIGACITACGGGAAAACACACCAITIC 3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCATTTC 3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAAGATATGTCTTCCTCCAGAGAGAGTGGGAAATCTAAGTCAAAGATAAGCCCCCAAAA 3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTTCCCGATATTCCAGAGAAAGATCTTCAAGATGTGTTAAAGTGTTGATTAAAAGGG 3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTTCCCGATATTCCAGAGAAAGATCTTCAAGATGTGTTAAAGTGTTGTTTAAAAAGGG 3300
                                                                                                                                                                                                                                                                                                                            2521 ATGAATGCATTTCGGTTAAAGGAAGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG
               AAGTTAATACAGAGCAGAAACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAAC
                                                                                                                               2341 GCAGCAATACCTTGGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACT
                                                                                                                                                                                                TTCCACCTGCTTGTCAGTTGTCAACACCTTATAGGCCAACCTGCCTTTTCCAGCAAC
                                                                                                                                                                                                                                                                 AGCATCAAATACTTGCCACTCCACTTCAAAATTTACAGGTTTTAGCATCTTCTTCAGAA
                                                                                                                                                                                                                                                                                                          ATGAATGCATTTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG
                                                                                                                                                                                                                                                                                                                                                                       GTTCAAGCAAGGTATTTCAGGTGTTAAATGAAAAGAAACAGATATATGCTATAAATATG
                                                                                                                                                                                                                                                                                                                                                                                                    2581 GTTCAAGCAAGGTATTTCAGGTGTTAAATGAAAAGAAACAGATATATGCTATAAAATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAACTTAGAAGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAACTTAGAAGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAATAAACTACAACAACACAGTGATAAGATCATCCGACTTTATGATTATGAAATCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAATAAACTACAACAACACAGTGATAAGATCATCGGACTTTATGATTATGAAATCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 accagracarcracarceraaresascreresaaararrearcraarascrreaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAAAATATGTTAGAGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TICACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAAAGATATGTCTTCCTCCAGAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCCAAAA
                                                                              AGTCACCACCATATCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACACCAA
                                                                                                                                                                          AGCATCAAATACTTGCCACTCCACTTCAAAATTTACAGGTTTTAGCATCTTCTTCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAAA
                                                                                                              GCAGCAATACCTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACT
                                               AGTCACCACCAATATCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3181
                 2221
                                               2281
                                                                                2281
                                                                                                                                                                                                                                                                         2461
                                                                                                                                                                                                                                                                                                          2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3301
                                                                                                              2341
                                                                                                                                                                           2401
                                                                                                                                                                                                                                          2461
                                                                                                                                                                                                                                                                                                                                                                                                                                        2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3061
                                                                                                                                                                                                            2401
                                                                                                                                                                                                                                                                                                                                                                         2581
                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                              $ g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       रु व रु
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                쉱
                 ద
                                                                         g
                                                                                                         à
                                                                                                                                        d
                                                                                                                                                                          \stackrel{>}{\circ}
                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                  95
Pb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                               ò
```

1081 PACTAAGCTTGAATAAAATTCTGCTGATAACTCGGGAACTGTTAACCAAA 1140 TTATGATGATGATGACCAACCCAGAGGACTGTTGATGCTCAACTAGAGAAA 1200 1141 TTATGATGATGACGAACCAGAGGACTGGTTGATTGTTGCTCAACTAGAGAAA 1200 1141 TTATGATGATGACGAACCAGAGGACTGGTTGATTGTTGCTCAACTAGAGAAA 1200 1201 ACAGTGTTCGGCTAACTGAGGACTGGTTGGTTGTTGCTCAACTAGAGAAA 1200 1201 ACAGTGTTCGGCTAAGTGATGCTCTTTTAAATAATTGATTG	1441 CACAAGCPATGTCAAAAAACTAAACAACTTCTTCAAAAAGCTGTAGAACGGGGGGGG	1801 CAGTTAACCTTCTAAATAGCCCAGATTGTGTGTGTGTGTG
	0y 361 AGGCTGGAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT 420 0b 361 AGGCTGGAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT 420 0y 421 GATCCTCCCAGTGGTGGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAG 480 0y 481 GATCCTCCCACTTTAGCCTCCTAGTAGCTGTGATTACAGGCGTGCACCCACC	721 AGGAAGATGAATTCATGATTTTAGAAGGGGAAGTAGGCCCATGCCCCTCCCCCCCC

3301 ACCCAAACAGATATCCTTGAGCTCCTGGCTCATATGTTCAATTCAA 3360 3301 ACCCAAACAGAGATATCCATTCCTGAGCTCCTGGCTCATGTTCCAATTCAA 3360 3301 ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATGTTCTGGCC 3420 3421 ACCTCTCTGTTAACCAATTGGCCAAGGAACACAATTGTAATTATTGAAC 3480 3421 AACTTCTTGTTGTTGAATTCCTAACTCTTTTGAAAATATGTTCTGGCC 3420 3431 ACTTCTTGTTGTTGAATTCCTAACTCCATTTTGAAAATATGTTCTGGCC 3420 3431 ACTTGTTGTTGTTGAATTCCTAACTCCTTTTGAAAATTTTTGAAAAAAAA	RESULT 5 US-10-354-358-29 US-10-354-358-29 Sequence 29, Application US/10354358 Publication No. US2003015708241 GENERAL INPORMATION: APPLICANT: Milennium Pharmaceuticals, Inc. APPLICANT: MacBach, Kyle J. APPLICANT: MacBach, Kyle J. APPLICANT: Lightcap, Eric S. APPLICANT: Lightcap, Eric S. APPLICANT: Lightcap, Eric S. APPLICANT: Lightcap, Mark APPLICANT: MacBach, Wall APPLICANT: MacBach, Wald APPLICANT: MacBach, Wald APPLICANT: MacBach, Wark APPLICANT: MacBach, Wark APPLICANT: MacBach, Mark APPLICANT: MacBach APPLICANT: Mac
2221 AAGTTAATACAGACCAGAACATACCACTITTGAGCAACCTGTCTTTTCAGTTTCAAAC 2280 2221 AAGTTAATACAGACCAGAACATACCACTITTGAGCAACCTGTTTTCAGTTTCAAAC 2280 2221 AGTCACCACCAATACCACAATACCATTTGAGCAATCTTTTGAACACCACA 2340 2281 AGTCACCACCAATACCACCATTTGAATGCTTTGACCCAAATCTTTTGTAAGACACCACA 2340 2281 AGTCACCACCAATACCAACATTCAACATTTGACCACAATCTTTTGTAAGACACCACA 2340 2341 GCACCAATACCTTCGACTTTACATGACTTTTACACACTTTTTGTAAGACACCACA 2400 2401 TTCCACCTTGCAATACTACACTTTACACGCTGTTTTACACACTTTTCAACACACCACCACCACCACACACA	2821 AGAAAAATCCATTGATCCATGGAAGGCAAGAGTTACTGGAAAAATAGTTAGAGGCAG 2880 2821 AGAAAAATCCATTGATCCATGGGAACGCAAGAAAAATAGTTAGAGGCAG 2880 2821 TTCACCAACAATGGCATTGTTCAAGTTACTGAAACCAGTTACTTTCTGA 2940 2821 TTCACACAATCCATCAAAAGGCATTGTTCAAGTTATTTAACCAGCTAACTTTCTGA 2940 2941 TAGTTGATGGAATGCTAAAATTGATTTTTGGGATTGCAAACCAAATGCAACCAGTA 3000 2941 TAGTTGATGGAATGCTAAAGTTATTTTTGGGATTGCAAACCAAATGCAACCAGATA 3000 3001 CAACAAGTTTTTAAAAATTTTTTTTTTTTTTTTTTTTTT

291 TICKACANTCCATCAACTAATCAATCAATCAATCAATCAATCAA	RESULT 6 US-10-116-712-663 ; Sequence 663, Application US/10116712
1911 ACCOGNATIONTICARCINACTRACRAMCTRACTARCICARTICOCCUTTOGRAPHIC CONTINUES CO	2821 AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGG

	CCATAATGAACAAAGTIGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG [1141 TIATGATGAAGGAAACAACCAGAGGACTGGTTGGAGTTTGCTCCAAACTAGGAAA 1200 1141 TIATHIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	1261 TTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA 1320 1261 TTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA 1320 1321 GATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGAGACTACTTTCAAATGG 1380 1321 GATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGG 1380 1321 GATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGACTACTTTCAAATGG 1380	1381 CCACAGCAAACTGCAAGAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGT 1440	1501 TACCACTAGAAATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAGCAGCTGC 1560	1621 TTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGA 1680 1621 TTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAGTTGTGTT[[1741 ACCGGAATTCATTGAGACAAACTAAAACTAAACAGTCATGCCCATTTGGAAGAGTCC 1800 1741 ACCGGAATTCATTGAGACAAACTAAAACTAAACAGTCATGCCCATTTGGAAGAGTCC 1800 1801 CAGTTAACCTTCTAAATAGCCCAGATTGFGATGGAAGACAGATGATCAGTTGTACCTT 1860 1801 CAGTTAACCTTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATCAGTTGTACCTT 1860 1801 CAGTTAACCTTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTGAGTTGTACCTT 1860 1801 GTTTTATGAAAAAGACAAACTGTAATGTGAAGACGAAGATTGAGTTGTACCTT 1860
8 6 8 6 8 6	90 yo	6 6 G	\$ 6 6 6 6 7 6	\$ 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	90 90 90	95 G	8 8 8 8
; Publication No. US20030194764A1; GENERAL INFORMATION: APPLICANT: Bangur, Chaitanya S. APPLICANT: Bangur, Chaitanya S. TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY TITLE OF INVENTION: AND DIAGNOSIS OF LUNG CANCER FILE REFERENCE: 210121.568 CURRENT APPLICATION NUMBER: US/10/116,712 CURRENT FILING DATE: 2002-04-07 NUMBER OF SEQ ID NOS: 670 SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 663 LENGTH: 3866 TYPES DNA	Query Match 100.0%; Score 3866; DB 15; Length 3866; Best Local Similarity 100.0%; Pred. No. 0; 0. 0; O; Adatches 0; Caps 0; Qy 1 GGAATTCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	Qy 61 CAATGGCACAATCTCAGCTTACTGCAACCTCCCGCGTTCAAGCGATTCTCCTGC 120 Db 61 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCGTTCCAAGCGATTCTCCTGC 120 Qy 121 CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCACGGCTAACTAA	CITITICIALITAGIAGAGATGGGGTTTCACCATGITGGTCAGGCTGGTCTTGAACTCCTG [301 TGCCTGGCTGATTCTTTTTGTTGTTGATTTTTGAAACAGGGTCTCCCTTGGTCGCCC 3 301 TGCCTGGCTGATTCTTTTTTTTTTTTTTTTTTTTTTTTT	421 GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCCAC	541 CTCCTGGACTCAAGGATTCGCCTCCACATTCCCAAAGTCCGGAGATTACAGGTGTG [

```
1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1320
                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACAAGGTAATGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAG 1500
                           420
                                                                                                                                   480
                                                                                                                                                                                   480
                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                                                                                                                                                                                       099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                          361 AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                               GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCACCACGG
                                                                                                                                                                                                                                                                 CTAATTTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                       CTCCTGGACTCAAGGGATCCGCCTGCCTCCACTTCCCAAAGTCCCGAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                      CTCCTGGACTCAAGGGATCCGCCTGCCTCCTCCCAAAGTCCCGAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTCCTCACAAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661 GGTCCTCACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081 AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAATTTTTGTATTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGGTTTAAATTAATTATCTAAAAAACATTTTTTGGATACATTGGTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACATTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTATGATGATGATGAACCTAGAGGACTGGTTGATTTGTTGCTCAAACTAGAGAAAA
                                                                                                                                GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCCACTGCACACTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGATGATGATCCTAAATCCAGATACAGTAAAATGGGGTATGGGAAGGTAGAATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATTIGCTGAATTAAAAAGCTATTCAAGAGCCAGATGATGATGCACGTGACTACTTCAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGCTCGAAAACTAGAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAGCAAACTGCAAGAAATTTGCTTTTTGTTCATATATCTTTTGCACAATTTGAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccagagcaaacrigcaagaaarrrgcrirrrgricarararcrirrgcacaarrrgaacrgr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                           361
                                                                                                                                421
                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                               S B S B S
                                                                                                                                                                                                                                                                                                                                                                                 음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25 de 26 de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
APPLICANT: Bonoghue, Mary
APPLICANT: Staglano, Mary
APPLICANT: Staglano, Mary
APPLICANT: Staglano, Marcy
APPLICANT: Staglano, Mancy
APPLICANT: Staglano, Jacquelin
APPLICANT: Rediglano, Machods and compositions for treating
TITLE OF INVENTION: Mathods and compositions for treating
TITLE OF INVENTION: 2010, 33126, 43126, 53247, 2429, 1120,
TITLE OF INVENTION: 2010, 33126, 43126, 5327, 1419, 18036, 18105, 38650,
TITLE OF INVENTION: 10522, 18107, 2327, 1419, 18036, 18105, 38650,
TITLE OF INVENTION: 10522, 18100, 3865, 2248, 2448, 4843, 32135, 12208,
TITLE OF INVENTION: 1010, 19499, 21833, 2917, 59590, 15992, 2804,
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 1452 or 6585 molecules
TITLE OF INVENTION: 9792, 18400, 18520, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18592, 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATGGCACAATCTCAGCTTACTGCAACCTCCGCGTTCTCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTTTCTATTTAGTAGAGAGTTTCACCATGTTGGTCAGGTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATGGCACAATCTCAGCTTACTGCAACCTCCGGGGTTCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTTTCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAATTCCTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAATTCCTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٠<u>;</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.0%; Score 3866; Best Local Similarity 100.0%; Pred. No. 0; Matches 3866; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: HC
US-10-353-690-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
```

D

8

8 8

8 8 6

8 % 8

2521 ATGARDGCATTTCGGTTAAAGGAATTTATTCCAIATTAAAGGAATATGCATAAAATTG 2640 2581 GTCAAGCAAGGATTTCAGGGTTTAAATGAAAAAAAAAAA	3481 ACTATAGNOGIGGIGAAAUTCATATTCTTCATCCTCCAAGACTTTTGAAAAAAAAGGG 3540 3541 GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGAAGGGAGGTATAAAATTTGGACT 3600 3541 GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT 3600 3601 GTTATACTCTTGAATCCTGGGAAATCTACATTTGAAGAGTATAAATATATTGGACT 3600 3601 GTTATACTCTTGAATCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT 3660 [
6 4 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	90 OO OO
CACAGGRAPHOTICADADAGGRAPHOCOTICADADAGGCTG CACAGGGRAPHOTICAGADAACACTTCTTCADADAGCTGTGGAACTG TACCACTAGAANTGCTGGAAATTGCCCTGCGGAATTTAAACTGCCCAAGAAAAACCTCCAAAAAACCTCCAAAAAACCTCCAAAAAACCTCCAAAAAA	2401 TECCACCTGCTTGTCAGTTGTCACCCTTATGCCGCACCTGCCTG
5	6 B 6 B 6

181 CTTITCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG 240 241 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG 300 241 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG 300 301 TGCCTGGGCTGATCCTTTTTTTGTTGTTGTTGGATTTTTGAAACAGGGTCTCCCTTGGTCGCCC 360 301 TGCCTGGCTGATTCTTTTTTTTTTTTTTTTTTTGAAACAGGGTCTCCCTTGGTCGCCC 360 301 TGCCTGGCTGATTCTTTTTTTTTTTTTTTTGAAACAGGGTCTCCCTTGGTCGCCC 360 301 AGGCTGGAGTGCTGGTGCTTTGGATTTTTGAAACAGGGTCTCCCTTGGTCACC 360 361 AGGCTGGAGTGCTGGTGCTGTTTTTTTTTTTTTTTTTTT	481 CTAATTTTGTATTTATTAGAGACGGGTTTCACCATGGCCAGGCTGTTCTCAAA 540 481 CTAATTTTTGTATTTATTAGAGACGGGTTTCACATGTTGGCCAGGCTGTTCTCAAA 540 481 CTAATTTTTGTATTTTTATTAGAGACGGGTTTCACACATGTTGGCCAGGCTGTTCTCTCAA 540 541 CTCCTGGACTCAAGGGATCCGCCTCCCTCCCACATGTTGGCCAGGCTGTTCCTCAG 600 541 CTCCTGGACTCAAGGGATCCGCCTCCCTCCCACATTCTTTTTCTGGTCCATTTCTTCCTTAG 600 601 AGTCACCACACACATTAGACTCTTAAATTCTTTAAATTCTTTTTTTT	1081 AACTAGATGATATATATCTGCTGTTACTACAGATATCTGGGAACTGTTAACCAAA 1140 1141 TTATGATGATGGCAAACACCCGGGGGACTGGTTGTTGTTGCTCAACTAGAGAAA 1200 1141 TTATGATGATGGCAAACACCCGGGGGGGTTGTTGTTGCTCAACTAGAGAAA 1200 1201 ACAGTGTTCCGCTAAGTGTCTTTTAAATAATTAGTTGGTCGAACTACAGTCAAGAA 1200 1201 ACAGTGTTCCGCTAAGTGTCTTTTAAATAATTAGTTGGTCGTTACAGTCAAGGAA 1260 1201 ACAGTGTTCCGCCAAGAGTGATCATTTAAATAATTGGTCGTTACAGTCAAGGAA 1260 1201 TTGAAGCGCTTCCCCCAGATAAATATGGCCCAAAATGAGTTTTGCTAGAATTCAAGTGA 1320 1261 TTGAAGCGCTTCCCCCAGATAAATATGGCCCAAAATGAGGTTTTGCTAGAATTCAAGTGA 1320
8 6 8 6 8 6 8 8	6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B	8 6 6 6 6 6
3661 ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC 3720 3661 ATCAGCAAAAAAAATTCAGTGAGATTATCTTTAAAAGAAACTGTAAAATAGCAACCAC 3720 3721 TTATGGCACTGTATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780 3721 TTATGGCACTGTATATTGTAGACTTGTTTTTCTCTGTTTTATGCTCTTGTGTAC 3780 3721 TTATGGCACTGTATATTGTAGACTTGTTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780 3781 TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAGTATATTCTAAAAAAACTTTG 3840 3781 TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAGTATATTCTAAAAAAACTTTG 3840 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866	481, 9952, 328, Gaps	GGAATTCCTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTGGCCAGGCTGGAGTG GGAATTCCTTTTTTTTTT

\$ 6\$ 6\$ 6\$ 6\$

ö

Gaps

240

240 300 300 360 360 420 420 480 480 540

120 120

9 9

180 180

```
961 TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT 1020
                                                                                                                                                                CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGGGATTCTCCCTGC
                                                                                                                                                                                                                CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCACCCTGGCTAACTATT
                                                                                                                                                                                                                                              CTTTTCTATTTAGTAGAGGGTTTCACCATGTTGGTCAGGCTGGTCTGAACTCCTG
                                                                                                                                                                                                                                                                                                                241 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                 CTCCTGGACTCAAGGGATCCGCCTGCCTCCACTTCCCAAAGTCCCGAAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661 GGTCCTCACAACAACAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                               GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                  CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCCTGGCTAACTATTT
                                                                                                                                                                                                                                                                 CITITICIALITAGIAGAGAIGGGGITTCACCAIGITIGGICAGGCIGGICITGAACTCCTG
                                                                                                                                                                                                                                                                                                 ACCICAGGIGATCCACTIGCCTIGGCCTCCCAAAGIGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                 GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACACACCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTCCTCACACAACAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGATGATGATCATGATACCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITGGITITAAATTAATTATCIAAATATCIAAAAACATTTITGGATACATTGITGATGIGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTTCCATCTTTTCATTTCCCAG
                                                                                                                        GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                 AGGCTGGAGTGCTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACACACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTAATTTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTAATTTTTGTATTTTTTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCCTGGACTCCAAGGGATCCGCCTGCCTCCACTTCCCAAAGTCCCGAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721 AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACACTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rrregrirraarraarraarrarcraaaaacarrirregaracarrerea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> AGGAAGATGAAGTGATTTCATGATTTTAGAAAGGGGAAGTAGTAAGCCCACTGCACACTCCT</u>
                                                 Length 3866;
                                                                          ô
                                                                         Indels
                                                   DB 16;
                                                                         .;
0
                                                Query Match
100.0%; Score 3866;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3866; Conservative 0; Mismatches
           ; ORGANISM: Homo sapiens
US-10-295-027-803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                  Н
                                                                                                                                                                       61
                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                 61
                                                                                                                                                                                                121
                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                  ò
                                                                                                                       d
                                                                                                                                                 ð
                                                                                                                                                                  임
                                                                                                                                                                                               \stackrel{>}{\circ}
                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                    ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC 3720
                                                                                                                                                                                                TIGACATCATTITACTCTTGGAATAGTGGGTGGATAGCAAGTATTTTATTCTAAAAAACTTTG 3840
                                                                                                                                                                                                                                                                                                                                                                GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                     3601 GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                            ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAATAGCAACCAC
                                                                                                                                                                                                                                    TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATTTTTAAAAAACTTTG
                                                                                     GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                   TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                    GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                                                                     TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                   TAAATAAAGTTTTGTGGCTAAAATGA 3866
             3481
                                                             3541
                                                                                                                                                          3661
                                   3541
                                                                                   3601
                                                                                                                                    3661
                                                                                                                                                                                                            3721
                                                                                                                                                                                                                                    3781
                                                                                                                                                                                                                                                                                    3841
                                                                                                                                                                                                                                                                                                           3841
                                                                                                                                                                                                                                                           3781
                                                                                                                                                                                   3721
                                                           d
                                                                                                       g
                                                                                                                                                    d
           g
                                    ò
                                                                                ò
                                                                                                                            \dot{\delta}
                                                                                                                                                                             \dot{\circ}
                                                                                                                                                                                                    P
                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                   ò
```

600 600 660 660 720 720 840

840

780 780

2041 2101 2101 2161 2161 2221 2221 2281	2281 AGTCACCACCAATATCAACATCTAAATGGTTTGACCCAAAATCTATTGTAAGACACCAA 2341 GCAGCAATACCTTGGATGATTACATGGGTTTTAGAACTCCAGTTGTAAGAATGACT 2341 GCAGCAATACCTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACT 2341 GCAGCAATACCTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACT 2401 TTCCACCTGCTTGTCAGTGATGACCTTATGGCCAACCTGCTGTTTCCAGGAGCAACTGCTATTCCAGCAGCAACTGCTGTTTCCAGCAGCAACTGCTAATGCCAACTGCTGTTTTCCAGGAGCAACTGCTAATGCCAACTGCTGTTTTCCAGCAGCAACTGCTGTTTTCCAGCAGCAACCTGCTTTTCCAGCAGCAACCTGCTGTTTTCCAGCAGCACACCTGCTGTTTTCCAGCAGCACACCTGCTGCTGTTTTCCAGCAGCACACAGCACAGCCTAATGCTCAACCTTATTCCAGCACCTTATTCCAGCACCAACCTGCTGCTGCTGCTGTTTTCCAGCAGCACCAGACACAGCACAACCTGCTGCTGCTTGTTCCAGCAGCAACCTGCTGCTGCTGCTTGTTTCCAGCAGCACCAACCTGCTGCTGCTGCTGCTGCTTGTTCCAGCACCAACCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTG	2461 AGCATCAAATACTTGCCACTTCAAAATTTACAGGTTTTAGCATCTTCTTCAGCAA 2520 2461 AGCATCAAATACTTGCCACTTCAAAATTTACAGGTTTTAGCATCTTCTTCAGCAA 2520 2521 ATGAATGCATTACGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG 2580 2521 ATGAATGCATTTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG 2580 2521 ATGAATGCATTTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG 2580		1701 TGAATAAACTACAACAACAGTGATAAGATCATCGACTTTATGAATTATGAAATCACGG 2760	2821 2821 2881	2881 TTCACAACCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGTTAACTTTCTGA 2941 TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA 2941 TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA 2941 TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA	3001 3001 3061	3061 TCAAAGATATGTCTTCTCTCGGGGGGGGGGGGGGGGGGG
8 8 8 8 8 8 8	6 6 6 6 6	6 6 6	8 & 8 &	6 6 6	8 8 8	6 6 6	8 8	9
	Oy 1201 ACAGTGTTCCGCTAAGTGATGTTTTAAATAATTGATTGGTCGTTACAGCAA 1260	1321 GATTIGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCAGGTGACTACTTTCAAATGG 1381 CCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATCTTTTGCACAATTTGAACTGT 1381 CCAGAGCAAACTGCAAGAAATTTGCTTTTTGTTCATATCTTTTTGCACAATTTGAACTGT 1381 CCAGAGCAAACTGCAAGAAATTTGCTTCATATATCTTTTTGCACAATTGAACTGT 1441 CACAAGGTAATGCTAAAAAAAAAAACTGTTCATAAAAAGCTGTAGAACGTGGAGCAG	1441 CACAAGSTAAFGTCAAAAAAGTAAACAACTTCTTCAAAAAGGTGTAGAAGGTGGGGGGGG	1561 TTTCAGAGGAGGAAAGAAGAATTTATCAGGATCTACGGTATTAACTGCCCAAGAATCAT 1621 TTTCCGGTTCACTTGGGCATTTACAGAACAACAACAGTTGTGATTCCAGAGGACAGA 1621 TTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGA 1621 TTTCCGGTTCACTTGGGCCATTTACAGAATAGGAACAACAAGATTGTGATTCCAGAGGACAGA 1681 CTACTAAAGCCAGGTTTTATATATGGAGAACATGCCACCACAAGATGCAGAAATAGGTT	1681 CTACTAAAGCCAGGTTTTTATATGGAGAACATGCCACCACAAGATGCAGAAATAGGTT 1 1741 ACCGGAATTCATTGAGACAAACTAAACAAAACAAAACAGTCATGCCCATTTGGAAGAGTCC 1 1741 ACCGGAATTCATTGAGACAAACTAACAAAACTAAACAGTCATGCCCATTTGGAAGAGTCC 1	OY 1801 CAGTTAACCTTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTT 1860 1801 CAGTTAACCTTCTAATAGCCCAGATTGTGAAGACAGATGATTCAGTTGTACCTT 1860 OY 1861 GTTTTATGAAAAACCTCTAGATCAGATCAGAATTGGTGTTGTCCTGAATCT 1920 Db 1861 GTTTTATGAAAAACACAAACCTCTAGATCAGAATTGGTTGTGCCTGGATCT 1920 1861 GTTTTATGAAAAACACAAACCTCTAGATCAGAATTGGTTGTGCCTGGATCTA 1920	1921 AACCAAGTGGAAATGATTCCTGTCAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATT 1 	Oy 1981 TCAAGGAACCTCGGTCAGATGAAAAGAGTTCAACTTATTATTATTGATTCATTATAAA 2040 Db 1981 TCAAGGAACTCTGGTGTCAAGAGTGAAAAGAGTTCTGAACTTATTATTACTGATTCAATAA 2040 Oy 2041 CCCTGAAGAATAAAAAGAGTCTTCTACGTAAATTAGAAGAACTAAAGAGTATC 2100 Oy IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII

PRIOR FILING DATE: 2001-11-13 PRIOR APPLICATION NUMBER: US 60/335,394 PRIOR FILING DATE: 2001-11-15 PRIOR PRILING DATE: 2001-11-21 PRIOR PRILING DATE: 2001-11-21 PRIOR PLILNG DATE: 2001-11-21 PRIOR PLILNG DATE: 2001-11-29 PRIOR PLILNG DATE: 2001-11-29 PRIOR PLILNG DATE: 2001-12-14 PRIOR PLILNG DATE: 2001-12-14 PRIOR PLILNG DATE: 2001-12-14 PRIOR APPLICATION NUMBER: US 60/340,376 PRIOR PRILING DATE: 2002-01-08 PRIOR APPLICATION NUMBER: US 60/347,211 PRIOR PRIOR DATE: 2002-01-08	PRIOR FILING DATE: 2002-01-10 PRIOR APPLICATION NUMBER: US 60/355,250 PRIOR FILING DATE: 2002-02-08 PRIOR APPLICATION NUMBER: US 60/356,714 NUMBER OF SEQ ID NOS: 1386 SOFTWARE: PatentIn Ver: 2.1 SOFTWARE: PATENTIAL NUMBER: US-10-295-027-832	Query Match Best Local Similarity 100.0%; Score 3866; Batches 3866; Conservative 0; Mismatches Qy 1 GGAATTCCTTTTTTTTTTTTTTGGATGGAGTT Db 1 GGAATTCCTTTTTTTTTTTTTTGGATGGAGTT Qy 61 CAATGGCACAATCTTGGAGTTAGGAGTTAGGAGTTAGGAGTTAGGAGTTAGGAGTTAGGAGTTAGGAGTTAGGAGG	121 121 181 181 241	Qy 301 TGCCTGGCTGATTCTTTTTTGTTGTTGTTGTTGGATTTTTTGTTGTTGTTGTTG
Qy 3181 AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG 3240 Db 3181 AGCAGATAATTAATCAGATTTCTAAATTAATTGATCCTAATCATGAAATTG 3240 Qy 3241 AATTTCCCGATAATTCTAAAATTGTTTAAAGTGTTGTTTAAAAGGG 3300 Db 3241 AATTTCCCGATAATTCCAGAGAAAGTTTTCCAAGATGTTGTTTAAAAGGG 3300 CD 3301 ACCCAAAAACAGGATATCCAGAGAAACTTCCTAGACTCGTTAATGTTCTAAAATCAAA 3360 Db 3301 ACCCAAAACAGGATATCCATCCTGAGCTCCTCGACTCATCCATATGTTCAAATTCAAA 3360 Db 3301 ACCCAAAACAGAGATATCCATCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAA 3360	3361 CTCATCCAGTTAACCAAATGGCCAAGGAACCACTGAAGAATGAAATGTTCTGGGCC	OY 3541 GAAAAAATGAFTTGCAGTTATTCGTAATGTCAGGTGTAAAAATATTTGGACT 3600 3541 GAAAAAATGATTGCAGTTATTCGTAATGTCAGATAGGAGTTAAAAATATTTGGACT 3600 3541 GAAAAAATGATTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATTTGGACT 3600 QY 3601 GTTATACTCTTGAATCCCTGGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT 3600 DD 3601 ATCAGCAAAAAAATCAGTGAGAATCTTAAAAAGAAAAACTGTAAAAATAGCAACCAC 3720 QY 3661 ATCAGCAAAAAAAATCAGTGAGATTATCTTTAAAAGAAAAAAAA	QY 3721 TTATGGCACTGTATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780 Db 3721 TTATGGCACTGTATATTGTAGACTTGTTTTCTCTGTTTTTTGTGTAATCTAC 3780 QY 3781 TTGACATCATTTACTCTTGGAATACTGGGTGGATAGCAGTATATTCTAAAAACTTTG 3840 Db 3781 TTGACATTTACTCTTGGAATAGTGGGTGGATAGCAGTATATTCTAAAAAACTTTG 3840 QY 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866 Db 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866 Db 3841 TAAATAAAGTTTTGTGGCTAAAATGA 3866	RESULT 10 US-10-295-027-832 Sequence 83.2 Application US/10295027 Publication No. US20030232350A1 Sequence 83.2 Application US/10295027 Publication No. US20030232350A1 GENERAL INFORMATION: APPLICANT: Aziz, Natasha APPLICANT: Gish, Kurt C. APPLICANT: Gish, Kurt C. APPLICANT: Gish, Kurt C. APPLICANT: Mack, David H. APPLICANT: Mack, David H. APPLICANT: Mcrean, Richard APPLICANT: Mcrean, Richard APPLICANT: Mcrean, Susan R. APPLICANT: Bos Biotechnology, Inc. TITLE OF INVENTION: Methods of Screening for Mcdulators of Cancer FILE REPERENCE: USSOI-01250US CURRENT APPLICATION NUMBER: US 909/663,733 FRIOR APPLICATION NUMBER: US 60/350,666

```
ö
                                                                                                                                                       SCTCCCGGGTTCAAGCGATTCTCCTGC 120
                                                                                                                                                                                            GTGCCACCCCTGGCTAACTATTT 180
                                                                                                                                                                                                                               GTTGGTCAGGCTGGTCTTGAACTCCTG 240
                                                                                                                                                                                                                                                                  AGTGCTAGGATTACAGCCGTGAAACTG 300
                                                                                                                                                                                                                                                                                                       TTGAAACAGGGTCTCCCTTGGTCGCCC 360
                                                                                                                                                                                                                                                                                                                                           TATAACCTCCACCTCCTGGTTTCAAGT 420
                                                                                                                                                                                                                                                                                                                                                                              ATTACAGGCGTGCACCACCACCCGG 480
                                                                                                                                                                                                                                                                                                                                                                                                                   CACCATGITGGCCAGGCTGITCTCAAA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCCAAAGTCCCGAGATTACAGGTGTG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTITICIGGICCATTICITCCTIAG 660
                                                                                                                      9
                                                                                                                               TTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                  o); Indels 0; Gaps
see File Wrapper or PALM.
                                                                                DB 16; Length 3866;
```

õ

ò g 95 AB

\$ B \$

8 & 8

Sy Op

B 农 B 农 B 农

음성

8 8 8

g

8 8

상 δ

```
241 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG 300
              Sequence 864, Application US/10295027

Sequence 864, Application US/10295027

Subjication No. US20030233250A1

Subjication No. US20030233250A1

APPLICANT: Azz. Deniel

APPLICANT: Giab. Mit. C.

APPLICANT: Giab. Wendy M.

APPLICANT: Giab. Wit. C.

APPLICANT: Matco. Peter A.

APPLICANT: Matco. Subject. Nethods of Diagnosis of Cancer. Compositions and TITLE OF INVENTION: Methods of Diagnosis of Cancer. Current Matcon. Subject. Nethods of Screening for Modulators of Cancer. TITLE OF INVENTION: Methods of Screening for Modulators of Cancer. TITLE OF INVENTION: Methods of Screening for Modulators of Cancer. TITLE OF INVENTION: Methods of Screening for Modulators of Cancer. TITLE OF INVENTION: Methods of Screening for Modulators of Cancer. CURRENT APPLICATION NUMBER: US 60/350,666

PRIOR FILING DATE: 2000-10-13

PRIOR PELING DATE: 2000-11-13

PRIOR PELING DATE: 2001-11-13

PRIOR PELING DATE: 2001-11-21

PRIOR PELING DATE: 2001-11-31

PRIOR PELING DATE: 2002-01-10

PRIOR PELING DATE: 2002-02-13

PRIOR PELING DATE: 2002-02-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCTTCCCGGGTTCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 CITITCIATITAGIAGAGAGAGAGAGAGAGAGITICACCAIGITGGICAGGIGGIGITAGAACICCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAATTCCTTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCCCCTGGCTAACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTTCTATTTAGTAGAGATGGGGTTTCACCCATGTTGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAATTCCTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 16; Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
100.0%; Score 3866;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3866; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
CRGANISM: Homo sapiens
US-10-295-027-864
        US-10-295-027-864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \overset{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3540
TAGTIGAIGGAAIGCIAAAGCIAAIIGAITIIGGGAIIGCAAACCAAAIGCAACCAGAIA 3000
                                                                                                                                                                                                                                 2941 TAGTIGATGGAATGCTAAAGCTAATIGATTTTGGGATTGCAAACCAAATGCAACCAGATA 3000
                                                                                                                                                                                                                                                                                                       CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAA 3060
                                                                                                                                                                                                                                                                                                                                                                                                                      TCAAAGATATGTCTTCCTCCAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA 3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GIGAIGITIGGICCITAGGAIGIAITITIGIACIAIAIGACITACGGGAAAACACCATITC 3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCCAAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAA 3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3720
                                                                                                                                                                                                                                                                                                                                                              CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATATGCCACCAGGAAGCAA 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTTCCCGATATTCCAGAGAAGATCTTCAAGATGTGTTAAAAGTGTTTAAAAAAGGG 3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3241 AATTICCGGATATICCAGAGAAAGATCTICAAGATGTGTTAAAAGTGTTTAAAAAAGGG 3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATGTTCTGGGCC 3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THATGGCACTGTATATATATGTAGACTTGTTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGACATCATITIACTCTIGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTIG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGACATCATTITACTCTTGGAATAGTGGGTGGATAGCAAGTATTTTATATTCTAAAAAACTTTG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC 3720
                                                                                                                       TTCACACAATCCATCAACATGGGATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                    TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCCATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATATGTTCTGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAAAAIGATITGCAGTTATTCGTAAAATGTCAGATAGGAGGTATAAAAATATTATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATTCAAATTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTATGGCACTGTATATATATGTAGACTTGTTTTCTCTGTTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                              2941
                                                                                                                                         2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3721
                                2821
                                                                                    2881
                                                                                                                                                                                                                                                                                                          3001
                                                                                                                                                                                                                                                                                                                                                           3001
                                                                                                                                                                                                                                                                                                                                                                                                                      3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3841
```

TGCCTGGCTGATTCTTTTTTTGTTGGATTTTTGAAACAGGGTCTCCCTTGGTCGCCC 360 301

> H RESULT

d

8 8

120

9

Gaps

180 120

180

240 240

QY 3601 GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT 360 Db 3601 GTTATACTCTTGAATCCTGTGGAATCTACATTTGAAGACACTCACT	RESULT 12 US-10-295-027-481 JOSQUERGE 481, Application US/10295027 JENDICATION NO. US20030232350A1 GENERAL INFORMATION: JAPPLICANT: Afai, Natasha JAPPLICANT: Glanberg, Wendy M. APPLICANT: Glanberg, Wendy M. APPLICANT: Glanberg, Peter A. APPLICANT: Hevezi, Peter A. APPLICANT: Hevezi, Peter A. APPLICANT: Marson, Susan R. APPLICANT: Marson, Susan R. APPLICANT: Marson, Susan R. JAPPLICANT: Bos Biotechnology, Inc. TITLE OF INVENTION: Methods of Disquosis of Cancer, Compositions and TITLE OF INVENTION: Methods of Disquosis of Cancer, TITLE OF INVENTION: Methods of Soreening for Modulators of Cancer, TITLE OF INVENTION: Methods of Soreening for Modulators of Cancer, CURRENT APPLICATION NUMBER: US 09/663,733 PRIOR PELING DATE: 2000-11-13 PRIOR PELICATION NUMBER: US 60/335,394 PRIOR FILING DATE: 2001-11-13 PRIOR PELICATION NUMBER: US 60/332,464 PRIOR APPLICATION NUMBER: US 60/332,464 PRIOR APPLICATION NUMBER: US 60/334,393 PRIOR APPLICATION NUMBER: US 60/334,393 PRIOR APPLICATION NUMBER: US 60/340,376 PRIOR PILING DATE: 2001-11-29 PRIOR PILING DATE: 2001-11-29 PRIOR APPLICATION NUMBER: US 60/340,376 PRIOR PILING DATE: 2001-11-29 PRIOR APPLICATION NUMBER: US 60/340,376	PRIOR FILING DATE: 2002-01-08 PRIOR FILING DATE: 2002-01-10 PRIOR FILING DATE: 2002-01-10 PRIOR FILING DATE: 2002-01-10 PRIOR PILING DATE: 2002-02-08 PRIOR PILING DATE: 2002-02-08 PRIOR PILING DATE: 2002-02-08 PRIOR FILING DATE: 2002-02-13 Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 1386 SOFTWARE: PatentIn Ver. 2.1 LENGTH 2574 TYPE: DNA ORGANISM: Homo sapiens US-10-295-027-481 Query Match 66.5%: Score 2569.2; DB 16; Length 2574; Best Local Similarity 99.9%; Pred. No. 0; Matches 2571; Conservative 0; Mismatches 3; Indels 0; Gaps 0;
Qy 2521 ATGAATGCATTTCGGTTAAAGGAAGTTTATTCCATATTAAAGCAGATAGGAAGTGGAG 2580 Db 2521 ATGAATGCATTTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAG 2580 Cy 2581 GTTCAAGCAACTTTCGGTTAAATGAAAAGAAACAATATTGCTATAAAATTG 2640 Db 2581 GTTCAAGCAACTTTCAGGTGTTAAATGAAAAGAAACAAATATTGCTATAAAATTG 2640 Cy 2641 TGAACTTAGAAGAAGAATAACCAAACTCTTGATAGTTACCGGAACGAATAAGCTTATT 2700 Db 2641 TGAACTTAGAAGAAGAATAACCAAACTCTTGATAGTTACCGGAACGAATAATT 2700 Qy 2701 TGAATAAACTACAACAACAGTGATAAGATCATCCGGCTTTATTATGAATTATGAAATCACGG 2760 Qy 2701 TGAATAAACTACAACAACAACAGTGATAAAATTCATCGACTTTATTATGAAATCACGG 2760 Qy 2701 TGAATAAACTACAACAACAACAACAACAGTGATAAAAATTATGAATTATGAAATCACTAAAAAAACTAAAAAAAA	AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATAGTTAGAGGCAG AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATAGTTAGAGGCAG AGAAAAATCCATTGATCCATGGGATTGTTCACAGTGATACTTGAAACAGTGTTAGAGGCAG TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTCTGA TTCACACAATCCATCAACATGGATTTTTGAGATGCTAAACAGTGATCTTATAGATTCTTCTGA TAGTTGATGGAATGCTAAAGCTAATTGATTTTGAGATTGCAAACCAAATGCAACAGTTAATTATATATTACCAACAGTTTTTTTT	3301 ACCCAAAACAGAGGATATCCTGAGCTCCTGGCTATCCATATATGTTCAAATTCAAA 3360 3301 ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGCTATCATATGTTCAAATTCAAA 3360 3361 CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAAATGAAATATGTTCTGGGCC 3420 3421 AACTTGTTGGTCTGAATTCTCCTAACTCCTTTTTGAAAATTGAAAATTGTTCTGGGCC 3420 3421 AACTTGTTGGTCTGAATTCTCCTAACTCCTTTTTGAAAATTTTTTTT

	CAAG 42 CAAA 14 CAAA 48 CAAA 48 CAAA 48 CAAA 48 CAAA 48	A AGAATTTACCAGCATCTACCACCATACACCACACATCATTTCCAGGTTCACTTGGG 11		1938 TCCTGTGAATTAAGAATTTTAAGTCTGTTCAAATTAGTCAGTTCGGGG 1997
6 6 6 6 6 6 6	8 6 8 6 8 6 8	3 3 3 3 3 3 5 5	8 6 8 6 8 6	868686868
2161 GGATGTATTTGTACTATAGGGAAAACACCATTTCAGCAGATAATTAAT	OY 3378 HIGH CHARGES AND CONTRACTED AND CONTROLL OF THE STAND ON S	RESULT 13 US-10-173-999-33 US-10-173-999-33 ; Sequence 33, Application US/10173999 ; Publication No. US20040005563A1 ; GENERAL INPORMATION: APPLICANT: Mack, David H. ; APPLICANT: Gish, Kurt C. ; APPLICANT: Eos Biotechnology, Inc. ; TITLE OF INVENTION: Methods of Diagnosis of Ovarian Cancer, Compositions ; TITLE OF INVENTION: And Methods of Screening for Modulators of Ovarian ; TITLE OF INVENTION: Cancer	CURRENT APPLICATION NUMBER: US/10/173,999 CURRENT FILING DATE: 2002-06-17 PRIOR APPLICATION NUMBER: US 60/299,234 PRIOR FILING DATE: 2001-06-18 PRIOR PILING DATE: 2001-06-27 PRIOR PLING DATE: 2001-06-27 PRIOR PLING DATE: 2001-11-13 PRIOR PLING DATE: 2001-11-13 PRIOR PLING DATE: 2001-04-12 PRIOR PLING DATE: 2001-04-12 PRIOR APPLICATION NUMBER: US 60/372,246 PRIOR PLING DATE: 2001-04-12 NUMBER: OF SEQ ID NOS: 163 SOFTWARE: PATENTIN VET: 2.1	; EMTTH: 2574 ; TYPE: DNA ; ORGANISM: Homo sapiens US-10-173-999-33 Query Match

```
1412
                                                                                                                                                                                                                                     309
                                                                                                                                                                                                                                                                                       1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1652
                         189
                                                                                                                                249
                                                                                                                                                                                                                                                                                                                                             368
                                                                                                                                                                                                                                                                                                                                                                                                                                                 428
                                                                셤
                                                                                                                             8 P
                                                                                                                                                                                                                                                                            음
상
음
                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                              1651
                                                                                                                                                                                                                                                                                                                                                                   1652 Tri-rarrrragraradacegegrifireccarerregeccaeccrecrereaacracrea 1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1711 CCTCAGGTGATCCACCTGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGTGTGAGCCACT 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1178 TICTITITITICITITIGAGACGGAGTTTCACTCTCGTTGCCCAGGCTGGAGTGCAATGGCA 1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCAAGTAGCTGGAATTACAGGCACGTGCTACCACTCCTGGCTAA-----TTTTGTAGT 1351
                                                                                                       427
                                                                                                                                                                                                            487
                                                                                                                                                                                                                                                                                                                   547
                                                                                                                                                                                                                                                                                                                                                                                                                           607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-04. - 10.237, Application UG/10027632

| Sequence 110.237, Application UG/10027632
| Publication No. US2003020407549
| GENERAL INFORMATION:
| APPLICANT: Wang, David G. | ITLE OF INVENTION: Identification and Mapping of Single Nucleotide | ITLE OF INVENTION: Polymorphisms in the Human Genome | ITLE OF INVENTION: Polymorphisms in the Human Genome | FILE REFERENCE: 10827.129 | CURRENT APPLICATION NUMBER: US/10/027,632 | CURRENT APPLICATION NUMBER: US 60/218,006 |
| PRIOR PILING DATE: 2000-07-12 | PRIOR PELING DATE: 2000-07-12 |
| PRIOR FILING DATE: 2000-03-29 | PRIOR FILING DATE: 2000-03-29 |
| PRIOR PELING DATE: 2000-03-29 | PRIOR PILING DATE: 2000-03-24 |
| PRIOR PILING DATE: 2000-02-24 |
| PRIOR FILING DATE: 1999-11-23 |
| PRIOR FILING DATE: 1999-11-23 |
| PRIOR FILING DATE: 1999-08-09 |
| PRIOR FILING DATE: 1999-08-08 |
| PRIOR FILING DATE: 1999-08-08 |
| PRIOR FILING DATE: 1999-08-09 |
| PRIOR PRIOR
                                                                                                                                   1532 AGTGCAATGGCGCAATCTCGGCTCACTGCAACCTCTGCCTCCTGGGTTCAAGTGATTCTC
                                                                                                                                                                                                                                                1592 CTGCCTCAGCCTCCTGAGTAGCTGGGACTACAGGCATGCACCACCATGCTTGGCTAATTT
                                               1472 TTTTTTTTTGTTTGTTTGTTTTTTTTTTTGAGATGGAGTTTCGCTCTTGTTGCCCAGGCTGG
                                                                                                                                                                                                                                                                                                                   TIGIATITITATIAGAGACAGGGITTICACCATGITGGCCAGGCTGTTCTCAAACTCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                           548 ACTCAAGGGATCCGCCTGCCTCCACTTCCCAAAGTCCCGAGATTACAGGTGTGAGTTCACC
TGATTCTTTTTTTGTTGTTGGATTTTTGAAACAGGGTCTCCCT-TGGTCGCCCAGGCTGG
                                                                                                                                                                                                            CCACTITAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCCGGCTAATTT
                                                                                                    368 AGTGCAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGTGATCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAATCTCAGCTTACTGCAACCTCCGGGGTTCAAGCGATTCTCCTGCCTCAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caarricaccreacrecaaccreaccrecaecrecaecricaaccarrerecrecere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTGCAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                608 ATGCCTGACCTTATAATTCTTAAGTCATTTTTTTTTTCTGGTCCATTTCTTCCTTAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 2470;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10.4%; Score 402; DB 16; Length 2 79.0%; Pred. No. 6.6e-86; ive 0; Mismatches 130; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 10.49
Best Local Similarity 79.09
Matches 518; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9 TTTTTTTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-110237
                                                                                                                                                                                                            428
                                                                                                                                                                                                                                                                                                                 488
309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129
                                                                                                                                              g
                                                                                                                                                                                                                                             엄청
                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    - P
                                         g
                                                                                                 ò
                                                                                                                                                                                        \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
1411
                                                                                                                                                    1471
                                                                                                                                                                                                                                                                                                1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1592 CIGCCICAGCCICCTGAGIAGCIGGGACTACAGGCAIGCACCACCAIGCTIGGCIAATIT 1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1711 cercaderdarceaecrecerecereceaaagrecresaarracagarracagrereaecaer 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                1532 Adriccaaridececaareredecreachecaacererecerecerederreadricae 1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          487
                                                                                                                                                                                                                              367
                                                                                                                                                                                                                                                                                                                                                                          427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGIATITITATIAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAACTCCTGG 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          548 ACTCAAGGGAICCGCCTGCCTCCACTTCCCAAAGTCCCGAGATTACAGGTGTGAGTCACC 607
                                                                                                                                        TGATICCACCCACTCAGCCTCCCAAAGTGCTAGGATTACAGGGATGAGGCACTGCACCTG
1352 reradradadacadddrirecedaedrigdreadcradriredaacaeeegaeereadd
                                                                                 TGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTGTGCCTGGC
                                                                                                                                                                                                                                                                                                rrrrrrrarrarricrirrrrrrrasasresasirrascrirririscensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1771 GTGCCCGGCCCTTCATTTCTTAATTACCTTATTGGGAAGTGCCTTATTAATGT 1826
                                                                                                                                                                                                                              TGATTCTTTTTTTTTTTTTTTTTTTTTTTTTTTTGAAACAGGGTCTCCCT-TGGTCGCCCAGGCTGG
                                                                                                                                                                                                                                                                                                                                                                          AGTGCAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGTGATCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCCGGCTAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           608 AIGCCIGACCITATAAIICTTAAGICATTITT
```

Search completed: September 30, 2004, 10:03:04 Job time: 3892 secs

BQ420892 AGENCOURT
BU34386 AU124386
BQ52992 AGENCOURT
EX361758 BX361758
AU133100 AU133100
AU44546 BX361758
B1462468 603203960
AA44546 BX7 AU113487
B1742894 AGENCOURT
BG718184 602696148
AU13553 AU13533
AU13553 AU13533
AU135576 AU132533
BA712818 602696148
BX35929 BX387299
BX469623 AGENCOURT
CD642431 AGENCOURT
CD642431 AGENCOURT
BG712428 602697927
BU508578 AGENCOURT
BG736948 60269322
BG73215 60269816
BG576948 60259322
BG773215 60269816
BG773215 60269816
BG773215 60269816
BG773215 GGNCOURT
BG773215 AGENCOURT
BG77313 AGENCOURT
BG77313 AGENCOURT
BG61170 AU118786
BG805313 AGENCOURT
BG61170 AU118786
BG61170 AU118786
BG61170 AU118786
BG61170 AU1000 E
BG61170 AU1000 E
BG61170 AU1300

ŀ

OM nucleic

Run on:

Sequence:

Minimum DB Maximum DB

Database

Searched:

```
Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes 20499374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AKO41487

2683 bp mRNA linear HTC 19-SEP-2003

Was musculus 3 days neonate thymus CDNA, RIKBN full-Length enriched
library, clone:A630014N10 product:DDAL SPECIFICITY PROTEIN KINASE

TIK (EC 2.7.1.-) (ESK) (PYT) homolog [Mus musculus], full insert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning
weth. Enzymol. 303, 19-44 (1999)
99279523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALIGNMENTS
BQ420892
BQ32386
BX361758
AU133100
AU133100
AU119487
BI462468
BQ428904
BQ7181844
BQ7181844
BQ7181844
BQ7181844
BQ7182833
AU132833
BQ718486
BW905869
BW905869
BW905879
BW50878
BW50878
BW50878
BW50878
BW50878
BW317299
BW317292
BW31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL601661
BG611704
B1463313
CF253343
BG502738
BG612576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AK041487.1 GI:26334518
HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                1222
sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AK041487
816.4
8112.8
8112.8
8112.8
8112.8
777.4
771.7
771.2
7731.4
7731.4
7731.6
7717.8
7713.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
7717.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6651.8
66466.6
66466.6
613.4
613.4
613.4
613.4
613.4
613.4
613.4
613.6
613.4
613.6
613.4
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
613.6
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
667
655.8
655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
AK041487
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
  Ų
                                                                         O
                                                                                                                                                                    O
                                                                                                                                                                                                                                                                                                                                                                                                                                                            υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AK041487 Mus muscu
AK049200 Mus muscu
BX415805 BX415805
AU132784 AU132784
                                                                                                                                                               4 , Search time 8584 Seconds
(without alignments)
13449.113 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                            1 ggaattoctttttttttttt......aagttttgtgggctaaaatga 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                      GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                              27513289 seqs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                               September 30, 2004, 01:41:54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AK041487
AK049200
BX415805
AU132784
                                                                                                                    sw model
                                                                                                                                                                                                                                                                                                                                                       IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 su
                                                                                                                    nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em 988 vtt...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *: mnu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em estba:*
em_esthum:*
em_esthum:*
em_estov:*
em_estpl:*
em_estpl:*
em_estpl:*
em_estpl:*
em_estpl:*
gb_estpl:*
gb_estpl:*
gb_estpl:*
gb_estpl:*
gb_estpl:*
gb_estpl:*
gb_estpl:*
gb_estpl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                               US-10-081-119-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_estom:*
em_gss_hum:
em_gss_inv:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2683
1841
1002
887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40.0
27.1
23.4
22.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1545
1047.2
906.2
851.8
                                                                                                                                                                                                                                                                                        Perfect score:
```

JOURNAL MEDLINE

Result Мо.

A1472200 tj81c07.x AA421620 zt98e06.r BG722770 602695207

```
SPDEYVKTDSSÄVTGLTTRKGSGPDRDAILPGSRPRGSDSYELRGLKPIGTIYLKDSL
VSNEKSSELMSDLIALKSKTDSSLTKLEETKPEIAERRPMQWGSTRKPECVFQMPAAF
APLRHVPDVTPKADKESPPISVPKWLDPKSACETPSSSSLDDYMKCFKTPVVKNDFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1030
                                                                                                                                                                                                                                          ESFARĪQVRLAELKAIQEPDDARDYFQMARENCKKFAFVHVSFAQFELSQGNLKKSĒQ
LLHKAVETGAVPLQMLETAMRNLHLQKKQLLPEEDKKSVSASTVLSAQEPFSSSLGNV
QNRSISCESRQQAGAARVLYGENLPPQDAEVRHQNPFKQTHAAKRSCPFGRVPVNLLN
                                                                                                                                                                                                                                                                                                                                                                                                                           ACPSSTPYSQLARLQQQQQGLSTPLQSLQISGSSSINECISVNGRIYSILKQIGSGG
SSKVPQVLNEKKQINAIKYVNLEDADSQTIESYRNEIAFLNKLQQHSDKIIRLYDYEI
TEQYIYMVMECGNIDLNSWLKKKKSINPWERKSYWKOMLEAVHIIHQHGIVHSDLKPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NFVIVDGMLKLIDFGIANQMQPDTTSIVKDSQVGTVNYMAPEAIRDMSSSRENSKIRT
KVSPRSDVWSLGCILYYMTYGRIPFQHIINQVSKLHAIINPAHEIEFPEISEKDLRDV
LKCCLVRNPKERISIPELLTHPYVQIQPHPGSQMARGATDEMKYVLGQLVGLNSPNSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1630
                                                                                         | codon_start=1
| protein_id="BAC30960.1"
| ba_xref="G1:26334519"
| translation="WaraEbilGSSVTIDSIMSKIRDIKNKINEDCTDELSLSKICADH
| translation="WaraEbilGSSVTIDSIMSKIRDIKNKINEDCTDELSLSKICADH
TETVNQIMRVGNTPENWINFLIKLEKNSSPLNDDLLNKLIGRYSQAIEVLPPDKYGQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     342 TCCTCCAGATAAATACGGCCAGAATGAGAGCTTTGCTCGAATACAAGTGAGACTTGCTGA 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          641
   evidence: FASTY, 99.9%ID, 96.7%length,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1331 ATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1571 GGAAAAGAAGTTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   971 TGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54 irriagaaaricgaggcrgaagagrraarriggcagcagrgrgaggrgraarrigarriccarcargag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151 GGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACAGAAAAACAGTGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     282 TCTAAATGACGATCTTTTAAATAAGCTGATTGGTCGGTATAGTCAAGCGATTGAAGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCCCAGATAAATATGGCCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         402 actaaaagctatrcaagagccrgargargcccgrgactactrccagarggccagggaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rciraaaaaaaagcagcricircaraaagcriciaagagcrigagagcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1511 AATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       582 gangcingakgacggccangcgnaacinacacciccagaaaaagcagcinccggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114 CAAAATAAGAGATATTAAAAATAAG---ATAAATGAAGACTGTACTGATGAGCTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       171 Grchaaarcrord ------coarcacacacaaacrorraacaaarraraad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    222 TGGGAACACCCCAGAGAACTGGTTGAATTTCTTGCTGAAACTAGAGAAAAAAACAGCTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1211 GCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                462 crecaagaagrirecriringigcacgiaicriringcacagririgaacrercreaagecaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTCAAAAAAGTAAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
40.0%; Score 1545; DB 11;
Best Local Similarity 78.7%; Pred. No. 0;
Matches 1966; Conservative 0; Mismatches 450;
SWISSPROT | P35761,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LKTAKVSACTLLPAVLM'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="putative"
                                   natch=2409)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The FANTOM Consortium and the RIKEN Genome Exploration Research Group Phase I & II Team.

Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-lenguh cDNs.

E (Dasses I to 2683)

B Adachi, J., Aizawa, K., Akimura, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, M., Kasukawa, T., Hara, F., Mara, J., Kouda, M., Katch, H., Kawai, J., Kolmo, H., Kouda, M., Katch, H., Kawai, J., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Marsuyama, T., Minyazaki, R., Ohno, M., Obsaco, N., Nakamura, M., Nishi, X., Nomura, K., Numazaki, R., Ohno, M., Obsacume, N., Sanch, R., Saitoh, H., Sakai, C., Sakai, K., Saltoh, R., Sakai, C., Sakai, K., Shibata, K., Shikaku, Akahira, S., Takaka, T., Takaku, Akahira, S., Muramatsu, M. and Hayashizaki, Y. Direct Submission

E Submitted (Id-UUL-2001) Yoshihide Hayashizaki, The Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 con library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN.
Division of Experimental Animal Research in Riken contributed to prepare mouse tissues.
Tissues were provided by Dr. John Todd (Dept. of Medical Genetics Wellcome Trust Centre for Molecular Mechanisms in Disease Wellcome Trust Christ building Addenbrookes Hospital Cambridge) whose assistance we gratefully acknowledge. Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/.
URL:http://fantom.gsc.riken.go.jp/.
Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamuras, Hazama, M., Nishinar, T., Harada, A., Yamamoto, R., Matsumoco, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahlki, M., Yohazaki, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kavai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system-384-format genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="unnamed protein product; DUAL SPECIFICITY PROTEIN KINASE TTK (EC 2.7.1.-) (ESK) (PYT) homolog [Mus musculus]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 full-length enriched mouse cDNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           The RIKEN Genome Exploration Research Group Phase II Team and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FANTOM Consortium.
Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"
mol_type="mRNN"
strain="c57BL/6J"
/db_xref="FANTOM_DB:A630014N10"
/db_xref="MGI:A606512"
/db_xref="mGI:A606512"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /dev stage="3 days neonate"
61. .2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="thymus" /clone_lib="RIKEN ful
                                                                                                                                                                                                                                                                                                                                                                                                 1076861
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
```

2711 ACAACAACAGGGTGATAAGATCATCGGACTTTATGATTATGAAATCACGGACCAGTACAT 277 	2771 CTACATGGGAATGTGGAAATATTGATCTTAATAGTTGGCTTAAAAGAAAAATC 28	2831 CATT 	2891 CCATCACATGGTATTGTTCACAGGATCTTAAACCAGGTAACTTTGTGATGGG Z 1893 CCATCAGCATGGTATTGTTCATAGTGATCTGAAGCCTGCTAACTTTGTGATAGTGGATGG 1	2951 ARTGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAGCCAGGCACACAAGCATTGGGATTGCAAACCAAATGCAGCCAGGCACAAAGCAA	3011 TGTTAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAATCAAAGGATAT [GTCTTCTCCAGAGAAATGGGAAATCTAAGTCAAGATAAGGCCCAAAAGTGATGTTG 31 	OY 3131 GTCCTTAGGATGTATTTTGTACTATGACTTACGGGAAACACCATTTCAGCAGATAAT 3190 Db 2133 GTCCTTGGGGTGCATTTTGTACTAGACTTATGGGAGGACGCCATTTCAGCACATCAT 2192	m 0	AAACA 3	Qy 3311 GAGGATATCCATTCCTGAGCTCCTGGCTCATCCATGTTCAAATTCAAACTCAGT 3370 Db 2313 GAGGATATCTATCCTGAGCTTCTCACACATCCGTATGTTCAAATTCAGCCCCATCAGG 2372	1 TAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATATG 	Oy 3431 TCTGAATTCTCCTAACTCCATTTGAAAGCTGCTAAA 3467 DD 2433 TCTGAATTCTCCTAACTCCATCTTGAAAACTGCAAAA 2469	RESULT 2 AK049200 AK049200 AK049200 1841 bp mRNA linear HTC 20-SEP-2003	DEFINITION MAS MASOLUES SO CONTROLLE TENDER THE TENDER THE TENDER TO CONTROL	KEYWORDS HTC; CAP trapper. SOURCE Mus musculus (house mouse) ORGANISM Mus musculus	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; REFERENCE 1 AUTHORS Carinoi, P. and Hayashizaki, Y. Allinia.	Meth. Enzymol. 303, 1199279253
642 GGACAAGAAGAGTGTGTCAGCATCGACAGTACTAAGTGCCCAAGAGCCGTTCTCCAGCTC 701 1631 ACTTGGGCATTTACAGAATAGGAACAACAGGTTGTGATTCCAGAGACAGAC	CAGGITITITATATGGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTC 1	1751 ATTGRGRCAARCTAACAAAACTAAACAGTCCATTTGGAAGAGTCCCAGTTAACCT 1810 	1811 TCTAAATAGCCCAGATTGTGATGATGAGACAGATGATTCAGTTGTACCTTGTTTTATGA 1870 	1871 AAGACAAACCTCTAGATCAGAATTTGGTTGTGCCTGGATCTAAACCAAGTGG 1930 	1931 AAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACC 1990 	1991 TCTGGTGTCAGATGAAAGAGTTCTGAACTTATTACTGATTCAATAACCCTGAAGAA 2050 1059 TTTGGTGTCCAATGAAAAGAGTTCTGAACTTATGTCTCATTTAATAGCCTTGAAGAG 1115		GGTTCCAGAGATAACCAGAAACGAGCTAAGCTAAGAAAGTCAGGTGTATTAACCA 217	GAATCCTGCTGCTCTTTCAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATAC 2	AGAGCAGAAACATACCACTITITGAGCAACCTGTCTTTTCAGTTTCAAAAACATCACCC 2	AATATCAACATCTAAATGGTTTGACCCAAAATCTATTGTAAGACACCAAGCAATAC 235	CTTGGATGATTACATGAGTGTTTTAGAACTCCAGTTGTAAAGAATGACTTTCCA 	2411 TIGICAGTIGICAACACCTTAIGGCCAACCTGTTTCCAGCAGCAGCACCAAAT 2470	2471 ACTIGCACTCCACTICAAATTIACAGGTTTTAGCATCTICTGAGCAATGAATGCAT 2530 	2531 TTCGGTTAAAGGAATTTATTCCATATTAAGCAGATAGGAAGGGGAGGTCAAGCA 2590 	2591 GGTAITTCAGGTGTTAAATGAAAAGAAACAGATATATGCTATAAAATATGTGAACTTAGA 2650 	2651 AGAAGCAGATAACCAAACTCTTGATAACCGGAACGAAATAGCTTATTTGAATAACT 2710

```
1631 ACTIGGGCATITACAGAATAGGAACAACAAGTIGIGAATICCAGAGGACAGACIACIAAAAGC 1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACAAGAAGAGTGTGTCAGCATCGACAGTACTAAGTGCCCAAGAGCCGTTCTCCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Simi
Matches 1410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            999
                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                               Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system-184-format Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:10090"
/clone="C330012K12"
/cell_type="ES cells"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
85. .>1839
                                                                                             genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (SC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Sanagawa 230-0045, Japan (E-mail:genome-resegsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp, Fax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Haraoka, T., Hirzone, T., Hirzone, T., Hirzone, T., Hirzone, T., Hirzone, T., Hirzone, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, M., Murata, M., Nomura, M., Marana, M., Saito, R., Saitoh, H., Sakai, K., Sakai, K., Sakai, K., Sakazume, N., Sasaki, Y., Saito, R., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Sogabe, Y., Tagami, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tamaru, A., Takahashi, F., Takaku-Akahira, S., Muranatsu, M., and Hayashizaki, Y., Toya, T., Yasunishi, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA library was prepared and sequenced in Mouse Genome broyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKBN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The FANTOM Consortium and the RIKEN Genome Exploration Research Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs
Nature 420, 563-573 (2002)
6 (bases 1 to 1841)
                 Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new 9 (2009) 40 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           full-length mouse cDNA collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        prepare mouse tissues.

Please visit our web site for further details.
URL:http://gancome.gc.riken.go.jp/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="FANTOM_DB:C330012K12"
/db_xref="MGI:2416445"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="mRNA"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FANTOM Consortium.
Functional annotation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1841
                                                                                                                                                                                                                                                                                                                                                                                                                                     20530913
                                                                                                                                                               1042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
                                                                                                                               MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
REFERENCE
                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
```

```
/ud xret="G1:26339884"
/translation="MEAEELIGSSVTIDSIMSKMRDIKNKINEDCTDELSLSKICADH
TETVOURNEVGTFPENMLNFLIKERANSSPHUDDLINKLIGRYSGAIFULPPDKYGQN
TETYOUNRACHTPENMLNFLIKERANSPHUDDLINKLIGRYSGAIFULPPDKYGQN
ESFARIQVRLAELKAIQEPDDARDYFQMARRYCKRAFVHYSFAQFELSGGMIKKSEQ
LIJHKAVETGANDLAELKAIQEDENDARDYFQMARRYCHAFAKRASCPFGKVOVNLLIN
QNRSIGESRQAGARAVLYCENLPPQDARSTRHQNPFKYGTHAARKSCPFGKVOVNLLIN
SPDFYVKTDSSAYTQLITHKGSGPBRDAILPGGRAFGSDSYBLRGIKPIQTIYLKDSL
VSNEKSSELMSDLIALKSKTDSSLTKLEETKPEIAERPMQMQSTRKPECVFQNPAAF
APLRHYPDVTPKARDSESPISYPKWLDPKSACTFPSSSSLDDYMKCFKTPVVKNDFPP
ACPSSTPYSQLARLQQQQGGLSTPLQSLQSGSSINECISVNGTIYSILKQIGSGG
SSKVPGYLNEKKGINAIKYVNLEDBADSQTIESYRNETAFLNKLQQHSDKIIRLYDYEI
TEQXIYMVMECGNIDLINSW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1630
/note="unnamed protein product; DUAL SPECIFICITY PROTEIN
KINASE TTK (EC 2.7.1.-) (ESK) (PYT) homolog [Mus musculus]
(SWISSPROT|P35761, evidence: FASTY, 99.9%ID, 96.7%length,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCTAAAATCTGTG------CCGATCACACGGAAACTGTTAACCAAATTATGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTCCAGATAAATACGGCCAGAATGAGAGCTTTGCTCGAATACAAGTGAGACTTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTAAAAGCTATTCAAGAGCCTGATGATGCCCGTGACTACTTCCAGATGGCCAGGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rthagaaarddagccrcaagacrtaartcgcagcagrcrcaccartgarrccarcardag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1031 CAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1151 GGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAAACTAGAGAAAAACAGTGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               246 reseaacaceceasasaacresrreaarrirrrrecreaaacrasaaaaaacaseceeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crecaagaagririecririrgiecacgrarerririceacagririeaacrereraagecaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1511 AATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            606 GATGCTGGAGACGGCCATGCGTAACTTACACCTCCAGAAAAAGCAGCTGCTTCCGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAAAGAAGTTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138 CAAAATGAGAGATATTAAAAATAAG---ATAAATGAAGACTGTACTGATGAGCTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27.1%; Score 1047.2; DB 11; Length 1841; 76.5%; Pred. No. 3.1e-211; ive 0; Mismatches 353; Indels 81; C
                                                                                                                                                                               codon_start=1
/protein_id="BAC33605.1"
/db_xref="G1:26339884"
                                                                                                              match=2409)
                                                                                                                                                    putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
```

Sep

Thu

8 8 8 8 8

음 상 음

d

ò

g

8 8 8

ò

유 장 유 상 음 상 원 장

8 8

 δ

Db

S a

```
Contact: Genoscope
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
BP 191 91006 EVRY cedex - France
BP 191 91006 EVRY cedex - France
BP 191 9106 EVRY cedex - France
Invitrogen. This sequence belongs to sequence cluster 3657.f For more information about this cluster, see
http://www.genoscope.cns.fr/
cgi-bin/cluster.cgi?seq=CS0CAP00BAC04QPI&cluster=3657.f. Contact :
Feng Liang Email : fliang@lifetech.com URL :
Feng Liang Email : fliang@lifetech.com InVitroGen Corporation 1600
Faraday Avenue Genoscope sequence ID : CS0CAP00BAC04QPI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="manual sapteus"
/mol_type="manual"
/db_xref="taxon:9606"
/dlone="CSCGAP008YE07"
/clone="Vector: type="THYMUS"
/note="Vector: pCMVSPORT 6; 1st strand cDNA was primed hote="Vector: pCMVSPORT 6; 1st strand cDNA was primed double-strand cDNA was digested with Not I and cloned into the Not I and BCORV sites of the pCMVSPORT 6 vector.
Library was not normalized."
                                                                                                                             BX415805

1002 bp mRNA linear EST 13-MAY-2003
BX415805 Homo sapiens THYMUS Homo sapiens cDNA clone CS0CAP008YE07
5-PRIME, mRNA sequence.
BX415805
BX415805.1 GI:30634668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          249
                                                                                                                                                                                                                                                                                                          Craniata, Vertebrata, Euteleostomi, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATCTAAATGGTTTGACCCAAAATCTATTGTAAGACACCAAGCAGCAGTAGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATCAAGTCTTCTAGCTAAATTAGAAGAACTAAAGAGTATCAAGAACCAGAGGTTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u> AGAGTAACCAGAAACAGTGGCAAGCTAAGAAAAGTCAGAGTGTATTAACCAGAATCCTG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            250 CTGCATCTTCAAATCACTGGCAGATTCGGAGTTAGCCCGAAAAGTTAATACAGAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAACAGTCACCACCAATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ANTCAAGTOTTOTAGCTAAATTAGAAGAAACTAAAGAGTATCAAGAACCAGAGGTTOCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCCCCGAAAAGTTAATACAGAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAACAGTCACCACCAATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGATGAAAAGAGTTCTGAACTTATTACTGATTCAATAACCCTGAAGAATAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1002;
CTACATGGTAATGGAATGTGGAAACATTGACCTAAATAGTTGGC 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Verte
Mammalia; Eutheria; Primates; Catarrhini; Hon
1 (bases 1 to 1002)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length CDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23.4%; Score 906.2; DB 13.
larity 98.8%; Pred. No. 2.5e-181;
Conservative 6; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
                                                                                                                                                                                                                                                                  Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Simi
hes 916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                        RESULT 3
BX415805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1796
                                                                                        1810
                                                                                                                                                                              1870
                                                                                                                                                                                                                                                                                                               1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGICAGIIGICAACACCTIAIGGCCAACCIGCCIGIIICCAGCAGCAACAGCAICAAAI 2470
                                                                                                                                                                                                                                                                  AAGACAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTAAACCAAGTGG 1930
                                                                                                                                                                                                                                                                                                                                                         AAATGATTCCTGTGAATTAAGGAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACC 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITIGGIGICCAATGAAAGAGIICTGAAC---TTATGICTGATTTAATAGCCTTGAAGAG 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTTCCAGAGAGTAACCAGAAACAGTGGCAAGCTAAGAGAAAGTCAGAGTGTATTAACCA 2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAATCCTGCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATAC 2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------ CAAAGAGTCACCACC 1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATATCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACACCAAGCAGCAATAQ 2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTTTTTATATGGAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTC 1750
                                                                                                                                                                                                                                                                                                                                                                                                965
                                                                                                                                                                                                               TCTAAACAGCCCAGATTTCTATGTGAAGACAGATAGCTCAGCTGTGACACAGTTAACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Abdabaggggricagaccaga - - - ccaadacgcgarircrgcccggcriccagaccacgridg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACCCTGCTGCCTTTGCACCCCTGCGGCACGTTCCAGATGTCACCCCGAAGGCTGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            crigiticaricardadectriacadecaderridecedecriceadeadeadeadeadeadeadea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----AGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCAGTTAACGGAAGAATTTATTCCATATTAAAGCAGATAGGCAGTGGAGGTTCCAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGTTTCAGGTATTGAATGAGAAAAACAGATAAACGCTATCAAATATGTGAACCTAGA
                                       CAGGGTTTTATATGGAGAGAACTTGCCTCCACAAGATGCCGAAGTGAGGCATCAAAACCC
                                                                                                                                cricaagcagacreacecagcraaacegrearececerriceaaaagreecagreaarer
                                                                                                                                                                            TCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGGTGTCAGATGAAAGAGTTCTGAACTTATTATTACTGATTCAATAACCCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAAACGGAATCAAGTCTTCTAGCTAAATTAGAAGAAACTAAAGAGGTATCAAGAACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGCAGAAACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAACAGTCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACTTTCCACCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTGGATGATTACATGAAATGTTTTAAGACTCCAGTTGTAAAGAATGACTTTCCACCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCGGTTAAAGGAAGAATTTATTCCATATTAAAGCAGATAGGAAGTGGAGGTTCAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTATITICAGGTGTTAAATGAAAGAAACAGATATATGCTATAAAATATGTGAACTTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTATTTGAATAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACGCCGATAGCCAACTATTGAGAGCTACCGCAACGAGATAGCGTTTTTGAACAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAACAACACAGTGATAAGATCATCCGACTTTATGATTATGAAATCACGGACCAGTACAT
                                                                                        ATTGAGACAAACTAAACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGC 2814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAACAGATTCAAG---TCTAACAAATTGGAAGAAACTA-
                                                                                                                                846
                                                                                        1751
                                                                                                                                                                                                                                                                  1871
                                                                                                                                                                                                                                                                                                                                                      1931
                                                                                                                                                                                                                                                                                                                                                                                                1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2651
  1691
                                            786
                                                                                                                                                                            1811
                                                                                                                                                                                                                      906
                                                                                                                                                                                                                                                                                                                                                                                                                                             1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2771
                                                                                                                                                                                                                                                                                                            996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1245
```

Helix Research Institute. FEATURES 1. 887 / Organism="Homo sapiens" //mol type="urkNa" //mol type="urkNa" //db xref="teaxon:9606" //colne="NT2RP4000532" //cell_type="teaxocarcinoma" //cell_line="NT2RP4" //clone_lib="NT2RP4" //note="Vector: pME18SFL3; mRNA from NT2 neuronal precursor cells after 2-weeks retinoic acid (RA) induction"	Query Match 22.0%; Score 851.8; DB 9; Length 887; Best Local Similarity 98.8%; Pred. No. 8.5e-170; Matches 878; Conservative 0; Mismatches 9; Indels 2; Gaps 2;	OY 1105 CTGATACTACAGATACTCGGGAACTGTTAACCAAATTATGATGGCAAACAACCAG 1164	OY 1165 AGGACTGGTTGATTGTTGCTCAAACTAGACAAAAACAGTGTTCCGCTAAGTGATGCTC 1224	OY 1225 TITIAAAIDAATIGGTCGTTACAGTCAAGCAATIGAAGCGCTTCCCCAGATAAAT 1284	OY 1285 ATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC 1344	OY 1345 AAGAGCCAGATGATGCACGTGACTTTCAAATGGCCAGAGCAAATTGG 1404 	OY 1405 CITIGITCATATATCTITGACAATTIGAACIGICACAAGGAATGICAAAAAAAGTA 1464	
10 10 10 10 10 10 10 10	OY 2539 AAGGAATTTATTCCATATTAAAGCAGATAGGAAGGTTCAAGCAAG	OY 2599 AGGTGTTAAATGAAAAGAAACAGATATATGCTATAAAATATGTGAAACTTAGAAGAAGCAG 2658	OY 2659 ATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTATTTGAATAAACTACAAC 2718 	OY 2719 ACAGTGATAAGATCCCACTTTATGATTATGAAATCACGGACCAGTACATCTACATGG 2778	OY 2779 TAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAAAAGAAAAATCCATTGATC 2838 	OY 2839 CATGGGAACGCAAGASTACTGGAAAAATATGTTAGAGGCAGTTCACACAATCCATCAAC 2898 	OY 2899 ATGCATTGTCACAGTGATCTTAAAC 2925	132784 B87 bp 132784 NT2RP4 Homo sapiens cDN quence. 132784. 132784. 132784. 132784. 12784. 12784. 12784. 12784. 12784. 12784. 12784. 12784. 12887. 18887. 1

ò 임

```
AU124386 AU2RMZ Homo sapiens cDNA clone NT2RM2002111 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                       1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1686
  1326
                                                                                        1386
                                                                                                                                                                                   1446
                                                                                                                                                                                                                                                                               1447 GTAATGTCAAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCAC 1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1747 ATTCATTGAGACAAACTAACAAAACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTA 1806
                                                                                                                                     420
                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 916)

Ota,T., Wakamatsu,A., Ozawa,M., Ishii,S., Saito,K., Yamamoto,J.,
Nakamura,Y., Nishikawa,T., Nagai,T., Suzuki,Y., Sugano,S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Isogai, T.
Rath human cDNA project (Ota, T., Wakamatsu, A., Ozawa, M., Ishii, S., Saito, K., Yamamoto, J., Nakamura, Y., Nishikawa, T., Nagai, T., Suzuki, Y.; Sugano, S., Isogai, T.)
Unpublished (2000)
Contact: Takao Isogai
Genomics Laboratory
Helix Research Institute
153-2 Yana, Kisarazu, Chiba 292-0812, Japan
Tel: 81-438-52-3975
Pax: 81-438-52-3996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: genomics@hri.co.jp
HRI human cDNA project; 5'- & 3'-end one pass sequencing: Helix
Research Institute; cDNA library construction: Department of
Virology, Institute of Medical Science, University of Tokyo, and
Helix Research Institute.
                                                                                                                      361 CTGAATTAAAAGCTATTCAAGAGCCAGATGATGATGCACGTGACTACTTTCAAATGGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                          1567 AGGAGGAAAAAAAAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601 AGGAGGAAAAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661 GTTCACTTGGGCATTTACAGAATACGAACAACAGTTGTGATTCCAGAGGACAGACTACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1687 AAGCCAGGTTTTTATATGGAGAACATGCCACCACACAAGATGCAGAAATAGGTTACCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 AAGCCAGGTITITIATATAGAGAGAAACACTGCCACCCAAGATGCAGAAATAGGTTACCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTG
                                301 GGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTG
                                                                                             CTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAG
                                                                                                                                                                                                                                  421 CAAACTGCAAGAAATTTGCTTTTGTTCATATTTTGCACAATTTTGAACTGTCACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GIICACIIGGGCAITIACAGAAIAGGAACAACAGIIGIGATICCAGAGGACAGACIACIA
                                                                                                                                                                                                                                                                                                                         481 GTAATGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCAC
                                                                                                                                                                                        CAAACTGCAAGAAATTTGCTTTTGTTCATATATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:10949102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AU124386
AU124386.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1807 ACC 1809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841 AAC 843
    1267
                                                                                             1327
                                                                                                                                                                                        1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
AU124386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                    СP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   쉱
                                       d
                                                                                                                                  g
                                                                                                                                                                                   ò
                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                             ò
                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                      Homo sapiens (human)

Homo sapiens

Homo sapiens

Homo sapiens

Homo sapiens

Homo sapiens

Homo sapiens

Homanalia; Eutheria; Primates; Cararrhini; Hominidae; Homo.

Lobase; Lo 866)

NiH-MGC http://mgc.nci.nih.gov/

National Institutes of Health, Mammalian Gene Collection (MGC)

Londonal Institutes of Health, Mammalian Gene Collection (MGC)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-remail.nih.gov

Tissue Procurement: ATCC

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov

Location/Qualifiers

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .866
/organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="IMAGE:6041805"
/tissue_type="embryonal carcinoma, cell line"
/lab_host="DH10B (phage-resistant)"
/clone lib="NH1M MGC 92"
/note="Organ: testis; Vector: pCMV-SPORT6; Site_1: NotI; Site_2: Sall; Cloned unidirectionally; oligo-dT_primed.
Site_2: Sall; Cloned unidirectionally; oligo-dT_primed.
Average insert size 2.5 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1086
                                                                                                                                                                                   BQ420892 866 bp mRNA linear EST 23-MAY-2002
AGENCOURT 7802344 NIH_MGC_92 Homo sapiens cDNA clone IMAGE:6041805
5', mRNA sequence.
BQ420892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGA 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTG 1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TICCGCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAG 1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 GCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAAGTG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCCGCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITICITAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                             1945 AATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACCTCT 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 816.4; DB 13; Length 866; Pred. No. 2.7e-162; 0; Mismatches 17; Indels 0;
                                                      840 AATTAAAGAAA-TTAAAGTCTGGTCAAAATAGTCATTTCAAGGGAACCNT
                                                                                                                                                                                                                                                                                    BQ420892.1 GI:21116207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.1%;
98.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          / Mac
: Local St.
- 826; '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loca
Matches
                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                            RESULT 5
BQ420892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
```

à qq ò 셤 ò a ઠે g

à

```
Homo sapiens

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

To (Dases 1 to 931)

Ry Situbra; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

To (Dases 1 to 931)

National Institutes of Health, Mammalian Gene Collection (MGC)

AL (Dupublished (1999)

AL (Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov,

Tissue Procurement: ATC

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)

DNA Sequencing by: Agenout Bioscience Corporation

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at:

http://image.llnl.gov

Plate: LiAMl4003 row: m column: 13

High quality sequence stop: 656.

Location/Qualifiers

//organism="Homo sapiens"

//mn1 rvrne="MRNR"
                                                                                                                                                                                                                                                         BQ929926
AGENCOURT 8950097 NIH_MGC_71 Homo sapiens cDNA clone IMAGE:6471444
5', mRNA sequence.
BQ929926.1 GI:22344957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
840 CAAAAATTTACAGGTTTTAACCTCTTCTTTAACCAAATGGAAATGCCTTTCNGGTTAANG 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2640 GTGAACTTAGAAGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2700 TTGAATAAACTACAACACAGTGATAAGATCATCCGACTTTATGATTATGAATCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TIGAATAAACTACAACAACAACAGIGATAAGATCATCCGACTTTAIGATTAIGAAAICACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 GACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2760 GACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2820 AAGAAAAATCCATGATCCATGGGAACGCAAGAGTTACTGGAAAATATGTTAGAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 AAGAAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIGAACTIAGAAGAAGCAGAIAACCAAACTCTIGAIAGTIACCGGAACGAAATAGCITAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
21.0%; Score 811.4; DB 13; Length
Best Local Similarity 94.7%; Pred. No. 3e-161;
Matches 869; Conservative 0; Mismatches 40; Indels
                                                                               2542 GAAGAATTTATTCCAT 2557
                                                                                                                                915
                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (human)
                                                                                                                           900 GACGAATTTTNTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                          RESULT 7
BQ929926
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                       ₽
                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                        /cell_type="teratocarcinoma"
/cell_line="NT2"
/colo= lib="NT2RM2"
/note="Vector: pME18SFL3; mRNA from uninduced NT2 neuronal
precursor cells"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1768
                                                                                                                                                                                                                                                                                                                                                                                                                  1649 TAGGAACAACAGTTGTGATTCCAGAGACAACTACTAAAGCCAGGTTTTTATATGGAGA 1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1769 AACTAAACAGTCATGCCCATTTGGAAGAGTCCCCAGTTAACCTTCTAAATAGCCCAGATTG 1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1829 TGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTTATGAAAAGACAAACCTCTAGATC 1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAATGCCGAGATTTGGGTTGTGCCTGGATCTAAACCAAGTGGAAATGATTCCTGTGAATT 1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1949 AAGAAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACCTCTGGTGTCAGATGAAAA 2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2009 GAGTICIGAACTIATIATIACTGAITCAATAACCCTGAAGAATAAAACGGAATCAAGTCT 2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTAGCTAAATTAGAAGAACTAAAGAGTATCAAGAACCAGAGGTTCCAGAGAGTAACCA 2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAACAGTGGCAAGCTAAGAAAAGTCAGAGTGTATTAACCAGAATCCTGCTGCATCTTC 2188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATACAGAGCAGAACATACCAC 2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITIGAGCAACCIGICITITICAGITITCAAAACAGICACCAACATAICAACATCAAATG 2308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTGACCCAAAATCTATTTGTAAGACACCAAGCAGCAATACCTTGGATGATTACATGAG 2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTATGGCCAACCTGCCTGTTTCCAGCACCAACAGCATCAAATACTTGCCACT--CCACT 2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2486 TCAAAATTTACAGGTTTTAGCATCTTCTCAGCAAA----TGAATGCATTTCGGTTAAAG 2541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 GAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTCATTGAGACAACTAACAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 AACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCTTCTAAATAGCCCAGATTG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 AAGAAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACCTCTGGTGTCAGATGAAAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 AGAATGCCGAGATTTGGTTGTGCCTGGATCTAACCAAGTGGAAATAATTCCTGTGAATT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 AAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATACAGAGCAGAAACATACCAC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTTTTAGAACTCCAGTTGTAAAGAATGACTTTNCACCTGCTTG-CAGTTGTCAACAC 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1709 GAACATGCCACCACAAAATGCAAAATAGGTTACCGGAATTCATTGAGACAAACTAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 TGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTTATGAAAAGACAAACCTCTAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 TAGGAACAACAGTIGIGATICCAGAGACAGACTACTAAAGCCAGGITTITTATATGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTTCTGAACTTATTATTACTGATTCAATAACCCTGAAGAATAAAAGGGAATCAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421 TCTAGCTAAATTAGAAGAAACTAAAGAGTATCAAGGACCAGAGGTTCCAGAGAGTAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAACAGTGGCAATCTAAGAGAGAGTCAGAGTGTATTAACCAGAATCCTGCTGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTTGACCCAAAATCTATTTGTAAGACACCAAGCAGCAATACCTTGGATGATTACATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTATGGGCAACCTGCCTGTTTCCAGCAACAGCATCAAATACTTGGCCCTTCCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGTTTTAGAACTCCAGTTGT-AAAGAATGACTTTCCACCTGCTTGTCAGTTGTCAACAC
                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                   ώ
ω
                                                                                                                                                                                                                                                                                                               DB 9; Length 916;
                                                                                                                                                                                                                                                                                                          Query Match
21.0%; Score 812.8; DB 9; Length
Best Local Similarity 95.7%; Pred. No. 1.5e-161;
Matches 877; Conservative 0; Mismatches 31; Indels
1. .916
/organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
                                                                                                     'clone="NT2RM2002111"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
  source
```

ПЪ

6 6 6

9 9 9

8 &

8 8 8

6 B 6 B 6 B

à

6 6 6 6 6 6 6

Location/Qualifiers	Query Match 20.3%; Score 783.8; DB 13; Length 1059; Best Local Similarity 93.9%; Pred. No. 2.1e-155; Adalogation of the conservative 24; Adalogation of the conservation of		3130 GGTCCTTAGGATGTATTTTGTACTATATGACTTACCGGAAAACACCATTTCAGCAGATAA 31 [Db 632 Thaircian the control and control a	Oy 3310 AGAGGATATCCTGAGCTCCTGACCATATGTAAATTCAAATTCAACTCCTGG 3369 512 AGAGGATATCCTTGAGCTCCTGAGCTCCATATGTTCAAATTCAAACTCATCCAG 453 Oy 3370 TTAACCAAATGGCCAAGGGAACCACTGAAGAATGAAATTGTACTAAACTTGTTG 3429 Cy 3430 GTCTGAATTCTCTTACTCCTGAAGAAATGAAATTGTTCTGGGCCAACTTGTTG 3429 Oy 3430 GTCTGAATTCTCCTAACTCCATTTTGAAAATTGATTCTTGAACACTATAGTG 333 Oy 3490 GTGGTGAAATTCTCTCAACTCCATTTTGAAAATTGATAATATGAACACTATAGTG 333 Oy 3490 GTGGTGAAATTCTCTCATCTCCTCAAGACTTTTGAAAAAAAA
Oy 2940 ATAGTTGATGGATGCTAATGGTTTTGGGATTGCAAATGCAACCAGAT 2999 Db 301 ATAGTTGATGGATGCTAAATGTTTTTGGGATTGCAAACCAAATGCAACCAGAT 2999 Oy 3000 ACAACAAGTGTTGATGATTCTCAGGTTGGCACATTAATTA	QY 3180 CAGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATT 3239 Db 541 CAGCAGATAATTAATCAAATTACATGCCATAATTGATCCTAATCATGAAATT 600 QY 3240 GAATTTCCCGATATTCCAGAGAAGATCTTCAAGATGTTTAAAAAAGG 3299 Db 601 GAATTTCCCGATATTCCAGAGAAGATCTTCAAGATGTTTAAAAAAGG 660	Qy 3300 GACCCAAAACAGAGATATCCATTCCTGAGCTCCTGGCTCATCCTATGTTCAAATTCAA 3359 Db 661 GACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATTGTTCNNAATTCA 720 Qy 3360 ACTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATGTTCTGGC 3419 Db 721 ACTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAAAATTGAATTGTTCTGGC 780	CAACTIGITGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGA	DD 841 ACACTATAGNTGGTGGGTGATGATCATAATTNCCTTCATCCTCCCAGGAACTTTTTTGAA 900 Qy 3531 AAAAAAAGGGGAAAAAAA 3548 DD 901 AANAAAGGGGAAAAAAA 918	RESULT 8 BX361758 BX361758 Homo sapiens T CELLS (UTRKAT CELL LIKE) COT 10-NORMALIZED ACCESSION BX361758 Homo sapiens CDNA clone CSODJ004YA24 3-PRIME, mRNA sequence. HOMO sapiens CDNA clone CSODJ004YA24 3-PRIME, mRNA sequence. BX361758.1 GI:30376559 EX361758.1 GI:30376559 EX361758.1 GI:30376559 EXAMINED STATES OUR EXAM

g

g

ò

```
**Lord to the control of the control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          837 bp mRNA linear EST 01-AUG-2002
AU119487 HEMBA1 Homo sapiens cDNA clone HEMBA1005932 5', mRNA
sequence.
                                                                                                                                                                                                                                                                                                                                                                                             1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1869
                                                                                                            ATGTCAAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACACTAG 1509
                                                                                                                                                                                                                                                       1510 AAATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGG 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAAG 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAATGATTCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAA 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                          361 AAATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAGCAGCTGCTTTCAGAGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. [tobase] 1 to 837)
Ota,T., Nishikawa,T., Suzuki,Y., Ishii,S., Saito,K., Kawai,Y., Yamamoto,J., Wakamatsu,A., Nakamura,Y., Nagai,T., Sugano,S. and
301 ATGTCAAAAAAGTAAACAACTCCTTCAAAAGCTGTAGAACGTGGAGCAGTACCACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541 CCAGGTTTTTATATGGAGAGAACATGCCACCACAAGATCCAGAAATAGGTTACCGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAAAAGAAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGGITITITATATGGAGAGAACATGCCACCACACAAGATGCAGAAATAGGITACCGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATTGAGACAAACTAAAAACTAAAAAGTCATGCCCATTTGGAAGAGTCCCAGTTAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601 CATTGAGACAAACTAACAAACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1870 AAAGACAAACCTCTAGATCAGAATG-CCGAGATTTGGTTGTGCCTGGATCTAAACCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780 GGGAAATGATTCTGNGAATTAAGAAATTTAAAG-CTGGTCAAAATAG--CATTCAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTAAATAGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTTATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTCTGGTGTCAGATGAAA 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccr-regrercanargada 854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AU119487.1 GI:10934722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AU119487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isogai, T
                                                                                                                                                                                                                                                                                                                                                                                                     1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1929
                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       837
                                                                                                                    1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
AU119487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                     \stackrel{>}{\circ}
                                                                                                                                                                        g
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Assistant and a controlled to the controlled to 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .920
| organism="Homo sapiens" |
| nol_type="menna" |
| db_xref="taxon:9606" |
| clone="NT2RP4001283" |
| cell_type="teratocarcinoma" |
| cell_lib="NT2R" |
| clone="Nector: pME188FL3; mRNA from NT2 neuronal precursor |
| cells after 2-weeks retinoic acid (RA) induction"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1329
                                                                                                                                                                                                                                                                                                                                                               AU133100 920 bp mRNA linear EST 01-AUG-2002 AU133100 NT2RP4 Homo sapiens cDNA clone NT2RP4001283 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGC 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1330 AATTAAAAGCTATTCAAGAGCCAGATGCACGTGACTACTTTCAAATGGCCAGAGCAA 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1390 ACTGCAAGAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTA 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo. (Lasses 1 to 920)
Ota,T., Sugiyama,T., Ishii,S., Suzuki,Y., Saito,K., Yamamoto,J., Nishikawa,T., Nakamura,Y., Nagai,T., Sugano,S., Masuho,Y. and
       121 TTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1270 TTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAAATTCAAGTGAGATTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1150 TGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 777.4; DB 9; Length 920;
Pred. No. 4.8e-154;
0; Mismatches 13; Indels 6
                                                                                                                    TCATTTTACTCTTGGAATAGTGGGTGGATAGCA 3819
                                                                                                                                                         AU133100.1 GI:10993639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 97.8%;
Matches 840; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [sogai, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence.
                                                                                                                    3787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <del>, -1</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                       33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                RESULT 9
AU133100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
```

ORIGIN

g

ò

DP

à ВВ $\stackrel{>}{\circ}$

à

DD DD

```
/wolltype="mRNA"
/wolltype="mRNA"
/db_xref="taxon:9606"
/done="InAGE:258995"
/lab host="bH108"
/clone=lib="NIH MGC_97"
/clone="DH108"
/clone="Taxon: testis; Vector: pBluescriptR (modified pBluescript K8+); Site_1: BamH; Site_2: Sall-Xhol gtcgag); Oligo-4T primed using primer
5'-TTTTTTTTTTTTTVN-3', size-selected for average insert size 2.2 kb and normalized to ROT 5. This is primary library enriched for full-length clones and constructed using the Cap-trapper method (Carninoi, in preparation). Library constructed by M. Brownstein (NIMH)MHGRI, National Institutes of Health). Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1190
                                    BI462468 878 bp mRNA linear EST 21-AUG-2001
603203960F1 NIH_MGC_97 Homo sapiens cDNA clone IMAGE:5269695 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1251 AGTCAAGCAATTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGA 1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAATTGATTCCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGAC 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66 ACAATTGATTCCATAATGAACAAAGTGAGAGACATTAAAAATTAAGTTTAAAAATGAAGAC 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65
                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 978)
                                                                                                                                                                                                                                                                                                                                                                   Shiraki
                                                                                                                                                                                                                                       E I (Dases L to 0° 70, NIH-WGC http://mgc.noi.nih.gov/.

NIH-WGC http://mgc.noi.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (WGC)

L Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-remail.nih.gov
Tissue Procurement: Mixlos Palkovits, M.D., Ph.D.

CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shirak
Toshlyuki and Placo Carninci (RIKEN)

CDNA Library Preparation: Michael J. Brownstein (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

High quality sequence stop: 819.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          951 ATTICCCCAGTGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1131 GTTAACCAAATTATGATGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTACTGATGAACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 126 CTTACTGATGAACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 ATTICCCCAGCGCAGCTTTCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTG
                                                                                                                                                                                                                                                                     (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19.7%; Score 763.2; DB 12; Length 878; 95.5%; Pred. No. 4.9e-151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
                                                                                                                                                      Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                           mRNA sequence.
BI462468
                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                 BI462468.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
Matches 82
                                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                           ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
                    BI462468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1616
                                                                                                                                                                                                                                                                                                                                                                                   CCAGTGCAGTTTTCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATT 1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        484
                                                                                                                                                                                                                                                                                                                                                                                                                          124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            783
                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAA
                                                                                                                                                                                                                                                                                                          GTGAATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCC
                                                                                                                                                                                                                                                                                                                              GCGACGGGGAAATTCAAACGTGTTTGCGGAAAGGAGTTTGGGTTCCATCTTTTCATTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGCGCAGCTTTCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATTCCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATTCCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGAACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGAACTAAGCTTGAATAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAATTATGATGATGGCAAACAACCCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAATTATGATGATGGCAAACAACCCAGAGGACTGGTTGAGTTGTTGCTCGAAACTAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAATTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAATTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGATGCACGTGACTTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGGCCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGCCAGAGCAAACTGCAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTCACAAGGTAATGTCAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTCACAAGGTAATGTCAAAAAGTAACAACTTCTTCAAAAAGCTGTAGAACGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAATTTAAAACCTCCAAAAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGTACCACTAGAAATGCTAGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCTTTCAGAGGAGGAGAAAGAAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 crectricagaggaggaaaaaaaaaaritarcagcarcraccgrarraacrggccaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCATTTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATTTTCCGG-TCACTTGGGCATTTACAGAATAGGAACCACCGTTGTGTTNCAGAGGA
                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGACTACTAAAGCCAGGTTTTTATATGGAGAGAACATGCCACCACAGATGC 1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       836
                                                                                                                                                                                                                                                                     ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 837;
                                /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/dlone="HEMBAL1005932"
/tissue_type="whole embryo, mainly head"
/dev_stage="embryo, 10 weeks"
/clone_lib="HEMBAL1"
/note="Vector: pME185FL3"
                                                                                                                                                                                                                             Score 771; DB 9; Length 83
Pred. No. 1.1e-152;
0; Mismatches 32; Indels
Location/Qualifiers
                                                                                                                                                                                                                             19.9%;
ilarity 96.0%;
Conservative
                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                 Matches 800;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1617
                                                                                                                                                                                                                                                                                                          897
                                                                                                                                                                                                                                                                                                                                                                                   957
                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1677
                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       784
FEATURES
                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                          ਨੇ
                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
```

, 13

1.912 Arganism="Homo sapiens" /organism="Homo sapiens" /db xref="taxon:9606" /db xref="taxon:9606" /lissue_type="germinal center B cell" /lissue_type="germinal center B cell" /loce="type="germinal center B cell" /loce="type="germinal center B cell" /loce="type="germinal center B cells with a modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand colly was prepared from human tonsilar cells enriched for germinal center B cells by flow sorting (CD20+, IgD-); provided by Dr. Louis M. Staudt (NCI), Dr. David Allman (NCI) and Dr. Gerald Marti (GBER). ODNA synthesis was primed with a Not I - oligo(dT) primer [5-'TGTTACCAATCTGAAGTGGAGGGGCGCCTCATTTTTTTTT	Query Match 19.1%; Score 737.2; DB 9; Length 912; Best Local Similarity 93.3%; Pred. No. 1.6e-145; Matches 836; Conservative 0; Mismatches 53; Indels 7; Gaps 6; Qy 2971 TTGGGATTGCAAACCAAAGGATACAAGAGTGTTAAAGATTCTCAGGTTG 3030	999 TTGGGTCTCCACCCCCCCCCCCCCCCAC-AGIGITGGTTAAGATTCCTCGGTGG 3031 GCACAGTTAATTATATGCCACCCCAAAGCAATCACACACA	0y 3151 ACTATAGACTACGGGAAAACACTTTAGCGGAAATTCTAAATTTAC 665 0b 724 ACTATAGGCTAACGGGAAAACACTTCTGGGGATATTAACAGATTCTAAATTTAC 665 0cy 3211 ATGCCATAATTGATCCTAATCATGAAATTGCAGATATCCGGAGAAACATTCTCAATTTC 3270 0b 664 ATGCCATAATTGATCCTAATCATGAAATTGCAGATTCCCGGAGAAACATTCC 605 0cy 3211 AAGATGTGTTAAAGTG-TGTTTAAAAAGGGACCCCAAACAGAGAAAATCCCTGCGGAAAAACTTCCGGAGAAAAACTTCCGGAGAAAAAACAGAGAAAAATCCAAATCCCGGAGAAAAACTTCCTCAACTCCCGGAGAAAAACTTCCAAATCCGGAAAAAACAAAAAAAA
	Qy 1608 GCCCAAGAATCATTITCCGGTTCACTITGGGCATTTACAGAACAACAACAGTTGTGAT 1667 Db	1788 CTTGGAAGGTTACTGGAATTCTTGGAGGAGGAACTGTCACAGGTTACGGATTCTCACAGGTTACGGATTCTCCATATGGAGGAACTGTCA-CACAAGATTCTCGAGGTCTCCATATGGAGAACTGTCA-CACAAGATTCATTGAGACAACTAACAAACTAAACAAGGTCATGCAAGGTCATGCAAGGTCATGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGA	RESULT 12 AA744546 LOCUS LOCUS LOCUS AA74456 AA74466 AA7466

d

엄 à 셤

ò d

ò

```
EDIA SECTION SUPPLY OF THE PROPERTY OF THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG718184 778 bp mRNA linear EST 08-MAY-2001
60266148F1 NIH_MGC_97 Homo sapiens cDNA clone IMAGE:4828282 5',
mRNA sequence.
BG718184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 TCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACACCAAGCAGCAATACCTTG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCAGGTGTTAAATGAAAGAAAGGATATATGCTATAAAATATGTGAACTTAGAAAGA 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2714 ACAACACAGT-GATAAGATCAT-CCGACTTTATGATTATGAAATCACGGACCAGTACAT 2770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661 GCAGATAACCAAACTCTTGATAGTTACCCGGAACGAAATAGCTTATTTGAATAAACTACA
                                                                                                                                                                                                                                                                                                              CAGAAACATACCACTTTTGAGCAACCTGTCTTTTCAGTTTCAAAACAGTCACCACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTCAGGTGTTAATGAAAAGAAACAGATATATGCTATAAAATATGTGAACTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2655 GCAGATAACCAAACTCTTGATAGTTA-CCGGAAACGAAATAGCTTATTTGAATAAACTACA
                                                                                                                                                                                                              CCTGCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATACAGAG
                                                                                                                                                                                                                                                                                                                                                           241 CAGAAACATACCACTITITGAGCAACCTGTCTTTTCAGTTTCAAAACAGTCACCACCAATA
                                                                                                CCAGAGAGTAACCAGAAACAGTGGCAATCTAAGAGAAAGTCAGAGTGTATTAACCAGAAT
                                                                                                                                                                             CCTGCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCCCGAAAAGTTAATACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACACCAAGCAGCAATACCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 GATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACTTTCCACCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTTGTCAACACCTTATGGCCAACCTGCCTGTTTCCAGCAGCAACAGCATCAAATACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGAGAGTAACCAGAAACAGTGGCAAGCTAAGAGAAAGTCAGAGTGTATTAACCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAATGACTTTCCACCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG718184.1 GI:13997371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (human)
                                                                                                   121
                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                  2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                         2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2595
                                        2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
BG718184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                        g
                                                                                                                                                                         ઇ
                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/mol_type="mRNA"
/db_tref="mRNA"
/db_tref="txpe="mRNA"
/db_tref="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="txpe="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    792 bp mRNA linear EST 24-MAY-2002
AGENCOURT_7905694 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6105546
BQ428904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2054
                                                                                                                                                                                                           TICTCTGTTTTATGCTCTTGTGTAATCTACTTGACATCATTTTACTCTTGGAATAGTGGG 3810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2055 ACGCAATCAAGTCTTCTAGCTAAATTAGAAGAACTAAAGAGTATCAAGAACCAGAGGTT 2114
                                                                      TTAAAAGAAAACTGTAAAAATAGCAACCACTTATGGCACTGTATATATTGTAGACTTGTT 3750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGGAATCAAGTCTTCTAGCTAAATTAGAAGAAACTAAAGAGTTATCAAGAACCAGAGGTT 120
                                                                                                                         TTAAAAGAAAACTATAAAAATAGCAACCTTATGGCACTGTATATATTGTAGACTTGTT 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Context: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONTECH
CDNA Library Preparation: CLONTECH
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LiNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLCM2345 row: c column: 19
High quality sequence stop: 548.
Location/Qualifiers
rce
09
                                                                                                                                                                                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo. I (bases 1 to 792)
11.H-MGC http://mgc.nci.nih.gov/.
National institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                TGGATAGCAAGTATATTCTAAAAACTTTGTAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1995 GTGTCAGATGAAAAGAGTTCTGAACTTATTATTACTGATTCAATAAACCCTGAAGAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                      regaraccaagrararricraaaaacrirgraarraagrrrrgreecraaarga 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 731.4; DB 13; Length 792;
Pred. No. 2.7e-144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BQ428904.1 GI:21167980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch
|| Similarity 98.6%;
| 768; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                  3691
                                                                                                                                                                                                           3751
                                                                                                                                                                                                                                                                                                                                                   3811
                                                                                                                                        186
                                                                                                                                                                                                                                                                          126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
BQ428904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
```

d δ g

ð

2713

779

2654

2474

480

420

2354

2534

```
AU132533 NT2RP4 Homo sapiens cDNA clone NT2RP400021 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cell_line="NT2"
/cell_line="NT2"
/coll_line="NT2"
/lone=line="NT2RP4"
/note="Vector: PME18SFL3; mRNA from NT2 neuronal precursor
cells after 2-weeks retinoic acid (RA) induction"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1017 GATTCCATAATGAACAAAGTGAGAGACATTAAAAATTAAGTTTAAAAATGAAGCCTTACT 1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGAACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAATTATGATGATGCAAACAAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAG 1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185 GATGAACTAAGCTTGAATAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245 CAAATTATGATGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAG 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HRI human cDNA project (Ota,T., Sugiyama,T., Ishii,S., Suzuki,Y., Saito,K., Yamamoto,J., Nishikawa,T., Nakamura,Y., Nagai,T., Suguno,S., Masuho,Y., Isogai,T.)
Syano,S., Masuho,Y., Isogai,T.)
Unpublished (2000)
Contact: Takao Isogai
Genomics Laboratory
Helix Research Institute
1532-3 Yana, Kisarazu, Chiba 292-0812, Japan
Tel: 81-438-52-3975
Fax: 81-438-52-3986
                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1. (bases 1 to 821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: genomics@hri.co.jp
HRI human cDNA project; 5'- & 3'-end one pass sequencing: Helix
Research Institute; cDNA library construction: Department of
Virology, Institute of Medical Science, University of Tokyo, and
Helix Research Institute.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                               Ota,T., Sugiyama,T., Ishii,S., Suzuki,Y., Saito,K., Yamamoto,J.,
Nishikawa,T., Nakamura,Y., Nagai,T., Sugano,S., Masuho,Y. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5 GCGACGGGGAAATTCAAACGTGTTTGCGGAAAGGAGTTTGGGTTCCATCTTTTCATTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATTCCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   897 GTGAATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          957 CCAGTGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65 ccascscascrircistasaaarssaarccsassarrraasrsscassaarrsacaarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3;
                                           772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 18.6%; Score 720.6; DB 9; Length 821; I Similarity 95.1%; Pred. No. 5.2e-142; 774; Conservative 0; Mismatches 37; Indels 3.
                          724 TAGGAACAAAAGCTGTGGATTCCAGAGGACAGACTACTAAAGCCAGGTTT
    TAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAAAGCCAGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="NT2RP4000021"
                                                                                                                                                                                                                                                        AU132533.1 GI:10992887
                                                                                                                                                                                                                                                                                                    Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . .821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isogai,T.
                                                                                                                                                                                                                                                                                   EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Si
Matches 774;
    1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1137
                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                  RESULT 15
AU132533
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                    엄
    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DP
                                                                                                                                 /clone="INGERS-802802"
/lab host="INGERS-802802"
/lab host="DH10B"
/clone lib="NIH MGC 97"
/clone lib="WIH MGC 97"
/clone lib="NIH MGC 97"
/close="Organ: testis; Vector: pBluescriptR (modified pBluescript RA); Site 1: BamH1; Site 2: Sall-XhoI (groga); Oligo-dT primed using primer
5. -TTTTTTTTTTTTTTTTVN-3', size-selected for average insert size 2.2 kb and normalised to ROT 5. This is a primary library enriched for full-length (clones and constructed using the Cap-trapper method (carning), in preparation. Library constructed by M. Brownstein (NIMH/NHGRI, National Institutes of Health). Note: this is a NIH_MGC Library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          991 ATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACATTAAAA 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTCTGCTGATA 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1231 ATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCAGATAAATATGGCC 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTGGAAATTGCCCTG 1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGGCATTTACAGAA 1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65 ATTTAAGTGGCAGAGATTGACAATTGATTCCATAATGAAGTGAAGTGAGACATTAAAA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245 GGTTGAGTTTGTTGCTCAAACTAGAGAAAACAGTGTTCCGCTAAGTGATGCTCTTTTAA 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              664 AGCATCTACGGTATTAACTGGCCAAGAATCATTTTCCGGTTCACTTGGGCATTTACAGAA 723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   931 AGTTTGGGTTCCATCTTTTCATTTCCCCAGTGCAGTTTTCTGTAGAATGGAATCCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 AGTITGGGTTCCATCTTTTCATTTCCCCAGCGCAGCTTTCTGTAGAAATGGAATCCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATAAGTTTAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTCTGCTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCAGAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCCGCTAAGTGATGCTCTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATANATIGATIGGICGITACAGICAAGCAATIGAAGCGCTICCCCCAGATAAATATGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1291 AAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTCAAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTCAAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAACTGCCAAGAAATTTGCTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTAATGTCAAA-AAAAGTAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCATATATCTTTTGCACACTTTGAACTGTCACAAGGTAATGTCAAAACAAAAGTAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cricircaaaaagcrigragaacgrigaagcagraccacragaaargcrigaaarrg-ccrig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGAATTTAAACCTCCAAAAAAGCAGCTGCTTTCAGAGGAGGAA-AAGAAGAATTTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cegaattttaaaccrecaaaaaagcagcrecttreagaggaggagaagaagaagretare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 CTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCAGAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGATGATGCACGTGACTTTCAAATGGCCAGAGCAAACTGCAAGAAATTTGCTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>ښ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 778;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      / Match 18.7%; Score 723.4; DB 12; Local Similarity 98.8%; Pred. No. 1.3e-142; les 760; Conservative 0; Mismatches 6;
                                              1. .778
/organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
    ity sequence stop: 7
Location/Qualifiers
    quality
    High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        604
                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loca
Matches
                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

124

184

ä;

926

AAAAACAGIGITCCGCIAAGIGGIGCICTITIAAAIAAATIGAITGGICGIIACAGICAA 1256 	GCAATTGAAGCGCTTCCCCCGGATAAATATGGCCAAAATGAGGTTTTGCTAGAATTCAA 1316 	GTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGATGGCGCGTGACTACTTTCAA 1376 	ATGGCCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAA 1436 	CTGTCACAAGGTAATGTCAAAAAAGTAAACAACTTCTTCAAAAAGGTGTAGAACGTGGA 1496 	GCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAGCAG 1556 	CIGCTITCAGAGGAAGAAAGAAITTAICAGCAICTACCGTAITAACTGCCCAAGAA 1616	TCATTTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGA 1676	CAGACTACTAAAGCCAGGTTTTTATATGGAGAGA 1710
305	365	1317 (425 (1377	1437 (1497 (1557 (1617	1677
ζς GD	y dg	o o	oy B	yy da	ζζ QD	y du	QY QD	oy Db

Search completed: September 30, 2004, 08:58:10 Job time : 8594 secs

Human ner Human ner Human rep Human ova

BAC109BL2 Human cDN Human src Human cDN Gene #154 Human his Human imm

Human ova Human neu Human lun Human imm

Abx 14891
Abk84481
Abk84349
Abk84349
Abx84349
Abx92043
Aak82073

gen Human Human Human

Human Human Human

. e. i

```
Human; cancer; colon; breast; ovary; oesophagus; kidney; thyroid;
stomach; lung; prostate; pancreas; carcinoma; antitumour; cancerous;
cytostatic; gene therapy; antineoplastic; Wilm's tumour; adenocarcinoma;
gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ovary cancer related gene sequence SEQ ID NO:6293,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALIGNMENTS
                                                    ABK84349
ABK95044
ABK95044
ABK92073
AAK82073
AAK82073
AAL07542
AAL0754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-JUN-2000; 2000US-0209473P.
18-SEP-2000; 2000US-0233131P.
18-SEP-2000; 2000US-0233131P.
20-SEP-2000; 2000US-0234034P.
20-SEP-2000; 2000US-0234034P.
20-SEP-2000; 2000US-0234034P.
22-SEP-2000; 2000US-0234509P.
22-SEP-2000; 2000US-0234563P.
25-SEP-2000; 2000US-0234564P.
25-SEP-2000; 2000US-0234564P.
25-SEP-2000; 2000US-023580P.
25-SEP-2000; 2000US-023580P.
26-SEP-2000; 2000US-023538P.
26-SEP-2000; 2000US-023538P.
27-SEP-2000; 2000US-023538P.
27-SEP-2000; 2000US-023538P.
27-SEP-2000; 2000US-023538P.
27-SEP-2000; 2000US-023538P.
27-SEP-2000; 2000US-0235840P.
27-SEP-2000; 2000US-0235840P.
27-SEP-2000; 2000US-0235840P.
27-SEP-2000; 2000US-0235840P.
27-SEP-2000; 2000US-0235840P.
27-SEP-2000; 2000US-0235840P.
28-SEP-2000; 2000US-02358840P.
28-SEP-2000; 2000US-02358840P.
28-SEP-2000; 2000US-02358840P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABL67956 standard; DNA; 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAY-2001; 2001WO-US010838
              15-MAY-2002 (first entry)
WO200194629-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-DEC-2001
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABL67956;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABL67956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ovary can
Human tyr
Human lun
Human lTK
Human pro
Human 168
Nuclear f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lung canc
Ovarian c
Nuclear Human BLR
Human BLR
Human BLR
Human MAR
Human bre
Ovary can
Human cDM
Human dig
Human liv
                                                                                                                                 September 30, 2004, 00:07:39; Search time 1322 Seconds (without alignments) 12423.248 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                              US-10-081-119-13
3866
1 ggaattccttttttttttt......aagttttgtgggctaaaatga 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Abv73974 Aca62263 Aca62263 Aca62263 Ade404931 Ade31368 Ade313164 Ade31164 Ade31164 Ade31164 Ade31164 Ade31168 Adbx7453 Adbx7652 Adc37168 Add02294 Adc37168 Add07632 Adc8573 Adc8573 Adc8573 Adc8573 Adc8573 Adc8573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Abd77243
Abt10719
Ab168122
Aah18360
Aak89112
Aas31862
Abn90217
Abz72040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ab167956
                                                                                                                                                                                                                                                                                                                                                                                             6747726
                GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                   3373863 seqs, 2124099041 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                             using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABL67956
ABV73974
ABV73974
ADD49931
ADD49931
ADE31644
ADE31644
ADE31644
ADC31170
AAX303025
AAX03025
AAX03028
ADC3170
ADC3170
ADC3284
A
                                                                                                                                                                                                                                                                                           IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genesequiz001as;
genesequiz001bs;
genesequiz003as;
genesequiz003as;
genesequiz003cs;
genesequiz003cs;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N_Geneseq_29Jan04:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           geneseqn1980s:*
geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     geneseqn2000s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                   seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33866
33866
33866
33866
29975
2574
32266
32266
2574
372404
127404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             %
Ouery
Match Length D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32190
32190
32190
207433
                                                                                               nucleic search,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                174424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                               ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB
Maximum DB
                                                                                             OM nucleic
                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2221098451111222223321098448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
```

0 0 0 0 0 0

~

420

480 480 600

999 999 720 780 780 840 840 900

```
241 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG 300
                                                                                                       AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361 AGGCIGGAGIGCAGIGGGAICTIGGCICACIAIAACCICCACCICCIGGIIICAAGI
                                                                                                                                                                                                                                                                                                        GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACACGGG
                                                                                                                                                                                                                                                                                                                                                                                   CTAATITITIGTATITITIATITAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGATGATGATCCTAAATCCAGATACAGTAAAATGGGGTATGGGAAGGTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTGGTTTAAATTAAATTATCTAAATATCTAAAAACATTTTTGGATACATTGTTGATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACTATTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGIGITCCGCIAAGIGAIGCTCTITIAAATAAATIGAITGGTCGTIACAGICAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTTTCAAATGG
                                                                             TGCCTGGCTGATTCTTTTTTTGTTGTTGGATTTTTTGAAACAGGGTCTCCCTTGGTCGCCC
                                                                                                                                                                                                                                                          GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACACACCGGG
                                                                                                                                                                                                                                                                                                                                                   CTAATTTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCCTGGACTCAAGGGATCCGCCTGCCTCCCAAAGTCCCGAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   creeregaereaaggareegeergeerecaerreecaaagreegagarracaggrere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCCACTGCACACTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGGTATGGGGAAGGTAGAATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGGTTTAAATTAATTATCTAAATATCTAAAAACATTTTTGGATACATTGTTGATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTAAGACTGTACAGACTTCCTAGAAACAGTTTGGGTTCCATCTTTCATTTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTAAGCTTGAATAAATTTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATGATGATGCCAAACCACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261 TTGAAGCGCTTCCCCCAGATAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGA
                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                          301
                                                                                                                      301
                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                   셤
                                                                        \dot{\delta}
                                                                                                     S
                                                                                                                                                               ò
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                          \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes a method (M1) for screening for an antineoplastic agent. The method involves exposing cells to a chemical agent to be tested for anti-neoplastic activity, determining a change in comprises a sequence (S) selected from 8447 sequences (given in ABL61664 to ABL70110), or is at least 95% identical to (S), where a change in expression is indicative of anti-neoplastic activity. (I) has cytostatic activity and can be used in gene therapy. M1 can be used for screening an anti-neoplastic agent, and can be used for producing a product which is the data callected with respect to the anti-neoplastic agent as a result of M1, and the data is sufficient to convey the chemical structure and/or properties of the agent. M1 can be used in the treatment of cancer such as colon, breast, stomach, lung, thyroid, oesophageal, ovarian, kidney, prostate or pancreatic cancer, adenocarcinoma, carcinoma, clear cell cancer, infiltrating ductal cancer, infiltrating lobular cancer, squamous collicationma, neuroendocrine carcinoma, papillary carcinoma and Wilm's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Screening for anti-neoplastic agent involves exposing cells to a chemical agent to be tested for anti-neoplastic activity, and determining a change in expression of a gene of a signature gene set.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    crcaeccrcraagraecreegarracaegcarereccaccaccreecraecraarra 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCTTCCAAGGGATTCTCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTTTCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTITICIATITAGIAGAGAIGGGGTTTCACCAIGTTGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCACCACCACCAGGCTAACTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Horrigan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3866 BP; 1268 A; 731 C; 752 G; 1115 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Endress G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 3866; DB 6; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Я,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ebner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 6293; 44pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Carter KC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .,
28-SEP-2000; 20000S-0226034P.
28-SEP-2000; 20000S-0236109P.
29-SEP-2000; 20000S-0236841P.
29-SEP-2000; 20000S-0236841P.
29-SEP-2000; 20000S-0236891P.
02-OCT-2000; 20000S-0237173P.
02-OCT-2000; 20000S-0237278P.
02-OCT-2000; 20000S-0237278P.
03-OCT-2000; 20000S-0237316P.
03-OCT-2000; 20000S-0237458P.
03-OCT-2000; 20000S-0237569P.
03-OCT-2000; 20000S-02376604P.
03-OCT-2000; 20000S-02376604P.
03-OCT-2000; 20000S-02376604P.
03-OCT-2000; 20000S-02376604P.
03-OCT-2000; 20000S-02376604P.
03-OCT-2000; 20000S-02376604P.
01-NOV-2000; 2000US-02376604P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 100.
Matches 3866; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Augustus M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Weaver Z;
                                                                                                                                                                                                                                                                                                                                                                                                                                        (AVAL-) AVALON PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-188264/24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Young PE,
Soppet DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
```

1140 1140

g

g

 δ

상염

ð

```
crelative to healthy tumour colon cells as detected by microarray analysis. Differential expression was confirmed in cell lines derived from various forms of cancer, indicating involved of TTK in cancer as a more general mechanism. Disruption of TTK function using antisense cliquous decreased proliferation, inhibited anchorage-independent growth, and induced apoptosis of cancer cell lines, including a metastatic breast cancer cell line (MDA-MB-213) and a colorectal carcinoma cell line (SW620). These findings serve as the basis for the arterials and methods of the invention for use in diagnosing cancer of a patient, for planning and selection of appropriate therapeutic and/or prophylactic treatment, and for treatment of cancer associated with coverproduction of TTK, by inhibition of gene product production (by decreasing levels of transcription and/or translation), by decreasing TTK cativities in cancer cells, especially breast cancer or colon cancer cells. The present invention has the advantage of the or more of TTK's kinase activities in cancer cells, especially breast cancer or colon cancer cells. The present invention has the advantage of the or more of translation of a cancerson based on expression of TTK in a malignant or pre-malignant growth. It allows a more systematic approach for intervention of a cancerous disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITITICIATITAGIAGAAAGGGGITICACCAIGITGGICAGGCIGGICTIGAACICCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GGAATTCCTTTTTTTTTTTTTTTGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 crcadecrercaagraderessarracassearserseeaceaceeecesserra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recensecrearrerrantarrerrantarrearrerreasacasecrecerresresece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGCTGGAGTGCAGTGCGGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTAATTTTTGTATTTTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       crecregaercaagegarcegeergeerceaerreceaagereegagarracagererg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GGAATICCTITITITITITITIGAGAIGGAGTITCACTCTIGITGGCCAGGCTGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTTTCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u> AGGCTGGAGTGCAGTGCGGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAATTTTTGTATTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCTGGACTCAAGGGATCCGCCTGCCTCCAACTTCCCAAAGTCCCGAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGECACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTCTGGTCCATTTCTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3866; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3866 BP; 1268 A; 731 C; 752 G; 1115 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
       88888888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                              3600
                                                                                                                                                                          3720
                                                                                                                                                                                                              3720
                                                                                                                                                                                                                                                                                       3780
                                                                                                                                                                                                                                                                                                                                                             3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is that of cDNA encoding human tyrosine threonine kinase (TTK), a mixed specificity protein kinase that is involved in the cell cycle spindle assembly checkpoint. The invention is based on the finding that TTK is differentially expressed in colon tumour cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Reducing growth of cancer cells comprises reducing Tyrosine Threonine Kinase (TTK) activity, useful in diagnosing and treating disorders with abnormal expression levels and activity of TTK, such as lung, colon, prostate and ovarian cancer.
                                               TTATGGCACTGTATATATATGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                         GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                             GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACCTCTGAAGTGTT
                                                                                                                                                                       ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                            ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                        TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG
                                                                                                                                                                                                                                                                                                                                                         TIGACATCATTITACTCTTGGAATAGTGGGATAGCAAGTATATTCTAAAAAACTTTG
                                                                                                  GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                 TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mitotic checkpoint; colon cancer; breast cancer; tumour; cytostatic; gene therapy; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tyrosine threonine kinase; TTK; protein kinase; enzyme; human;
                                                                                                                                                                                                                                                                                                                                                                                                 TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 67-71; 113pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human tyrosine threonine kinase cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                        TAAATAAAGTTTTGTGGCTAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chan VW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
1026. .3551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag= a
/product= "TTK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABV73974 standard; cDNA; 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-FEB-2002; 2002WO-US005278.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-FEB-2001; 2001US-0271254P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Jefferson AB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-698650/75.
P-PSDB; ABP54938.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200268444-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Reinhard C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-SEP-2002
                                                                                                                                                                                                                                                                                   3721
                                                            3541
                                                                                                3601
                                                                                                                                   3601
                                                                                                                                                                        3661
                                                                                                                                                                                                            3661
                                                                                                                                                                                                                                                 3721
                                                                                                                                                                                                                                                                                                                        3781
                                                                                                                                                                                                                                                                                                                                                           3781
                                                                                                                                                                                                                                                                                                                                                                                               3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABV73974;
                                                                                                                                                                                                                                                                                                                                                                                                                                    3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
                                                                                                                           Dp
                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                             qq
                                                                                              ò
                                                                                                                                                                   ò
                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                               ò
```

ö

Gaps

9 9 120 120 180 180 240 240 300

300 360

```
ACA62263;
                                                                                                                                                                 Key
                                                                                                                                                                                 3120
                                                                                                                                                                                                              3120
                                                                                                                                                                                                                                           3180
                                                                                                                                                                                                                                                                        3180
                                                                                                                                                                                                                                                                                                      3240
                                                                                                                                                                                                                                                                                                                                                                                               3300
                                                                                                                                                                                                                                                                                                                                                                                                                            3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGACATCATITITACICITGGAATAGIGGGIGGATAGCAAGTATATICTAAAAAACTTIG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG 3840
                                                                                                                                                                                                  TCAAAGATATGTCTTCCTCCAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                    TTATGGCACTGTATATATATGTAGACTTGTTTTCTCTGTTTTTATGCTCTTGTATATCTAC
                 TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                        TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA
                                                                                                                                                    CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGGAAGCAA
                                                                                                                                                                                                                                                            3121 GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCATTTC
                                                                                                                                                                                                                                                                                                                                   AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                          ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCCAAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGCAAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIATGCCACTGTATATATGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTAATCTAC
TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTTCTGA
                                                         TGCAAACCAAATGCAACCAGATA
                                                                                                                     CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAA
                                                                                                                                                                                 TCAAAGATATGTCTTCCTCCAGAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA
                                                                                                                                                                                                                                           GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCATTTC
                                                                                                                                                                                                                                                                                                     AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG
                                                                                                                                                                                                                                                                                                                                                                AATTICCCGATATICCAGAGAAGGATCTICAAGATGTGTTAAAAGTGTTGTTTAAAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       crcarccacrraaccaargeccaagggaaccacrgaagaaargaarargracrcraggcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTATACTCTTGAATCCTGTGGAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATTATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3421
                                                         2941
                                                                                        2941
                                                                                                                                                  3001
                                                                                                                                                                                 3061
                                                                                                                                                                                                                                                                                                      3181
                                                                                                                                                                                                                                                                                                                                                                                               3241
                                                                                                                                                                                                                                                                                                                                                                                                                            3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3841
                                                                                                                     3001
                                                                                                                                                                                                                                         3121
                                                                                                                                                                                                                                                                                                                                                                3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3661
                                                                                                                                                                                                              3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                        ò
                                                                                                                   ò
                                                                                                                                            임
                                                                                                                                                                               ઠે
                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                 \dot{\circ}
                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

ACA62263 ID ACA62263 standard; cDNA; 3866 XX

RESULT 3

```
The invention relates to detecting cancer (other than ovarian cancer) in a subject, comprising comparing the expression levels of tyrosine threonine kinase (TTK, a mitotic checkpoint gene) polypeptide or chreatine kinase (TTK, a mitotic checkpoint gene) polypeptide or components of a test cell obtained from the subject and in a normal cell, on normal cell, indicates the presence of cancer other than ovarian cancer. Also included are reducing growth of a cancerous cell (by contacting a cancerous cell indicates the presence of cancer or reduce TTK polypeptide activity of inthe cell), an assay for identifying a candidate agent that reduces growth of a cancerous cell (comprising: (i) detecting the activity of a cancerous cell (comprising: (i) detecting the activity of TTK polypeptide activity in the presence of a candidate agent that cancerous cell displaying elevated expression of a TTK contacting a cancerous cell displaying elevated expression of a TTK-central in a cancerous displaying elevated expression of a cancerous displaying elevated expression of a cancerous displayeresion of TTK encoding polymcleotide with a candidate agent; and (ii) determining the effect of the candidate agent; and (ii) determining the contacting a cancerous displaying elevated expression of TTK-encoding polymcleotide in a test cancer cell of expression of TTK-encoding polymcleotide in a test cancer cell of expression of TTK-encoding polymcleotide in the test cancer cell with a level of expression of the polymcleotide in the test cancer cell with a level of expression of the polymcleotide in the test cancer cell with a level of expression of the polymcleotide in the test cancer cell cancer cell with a level of expression of the polymcleotide in the test cancer cell with a level of expression of the polymcleotide in the test cancer cell with a level of expression of the polymcleotide in the test cancer cell cancer cell with a level of expression of the polymcleotide in the test cancer cell cancer cell with a level of expression of the po
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        reducing growth of cancerous cells, identifying a candidate agent that reduces growth of a cancerous cell, identifying an agent that reduces TTK activity and assessing the prognosis of a cancerous disease other than ovarian cancer. The methods are also useful for determining the ability of a subject to respond to a particular therapy e.g. as a basis of rational therapy. The present sequence encodes human TTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Detecting cancer in a subject, by comparing expression levels of tyrosine threonine kinase polypeptide or polynucleotide in a subject cell and a normal cell, where an increase in the expression level in the test cell
                                                                                                                          Human; ss; gene; tyrosine threonine kinase; TTK; cancer; cytostatic; mitotic checkpoint gene.
                                                                                       Human cDNA encoding Tyrosine threonine kinase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 22-25; 79pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chan VW;
                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                          /product= "TTK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-FEB-2001; 2001US-0289813P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-FEB-2002; 2002US-00081119.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jefferson AB,
                                          (first entry)
                                                                                                                                                                                                                                                                                                           *tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 is indicative of cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     m.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (REIN/) REINHARD C. (JEFF/) JEFFERSON A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-456566/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CHAN/) CHAN V W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB: ABU61611
                                                                                                                                                                                                                                                                                                                                                                           US2003045491-A1.
                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Reinhard C,
                                          11-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                        06-MAR-2003
```

1191 AGCHANTANTANGATTICTANATTACACCANANTCACCCANANTCACCCANATCACCCANATCACCACCACCACCACACACA
C C C C C C C C C C C C C C C C C C C
110 MGBACCAGAGGTTCCAGAGGTAACCAGAAACAGTGCCAACCTAGGGAAAGTCAGAGT 1160 110 MGBACCAGAGGTTCCAGAGGTAACCAGAAACAGTGCCAACCTAGGGAAAGTCAGAGT 1160 111 MGBACCAGAGGTTCCAGAGGTACCAGAAACAGTACCGAATTCGCAGAAGTCAGAGT 1220 112 GTATTAACCGAATTCCTCCACACTTCTAACACCAGATTCGCAGATTCGCAGATTCGCCAGA 2220 112 MGTTAACCACACAATTCCTCACACTTTTAACACTTCTTTTCACACACCAC

O

CORIXA CORP.

Switzer A;

2003-844452/78.

es and polynucleotides useful for diagnosing, cancer, particularly lung cancer. ed polypeptides and treating ca New isolated preventing

Claim 1; SEQ ID NO 663; 250pp; English

call transformed or transfected with the above expression weetor, an isolated antibody, or its antigen-binding fragment, that appecifically binds to the above polypeptide, an oligonucleotide that hybridises to the above-mentioned micletide sequences under highly stringent conditions, a fusion protein comprising at least one polypeptide cited above, detecting the presence of a cancer in a patient, (comprising: obtaining a biological sample from the patient; contacting the biological sample with a binding agent, or an amount of the polypeptide that binds to the bidomy agent, or an amount of the polypeptide that binds to the oligonucleotide that hybridises to be oligonucleotide; and comparing the amount of polypeptide, or a predeterminal the amount of polypeptide, or the oligonucleotide that hybridises to the oligonucleotide, to a predetermine to polypeptide, or a time and then determining the presence of a cancer in the patient, a method for stimulating and/or expanding T-cells specific for a tumour protein (comprising contacting T-cells with the above composition and/or expanding and for a time sufficient to permit the polyputiceotide, under conditions and for a time sufficient to permit the sufficient on and/or expansion of T-cells, an isolated T-cell population comprising r-cells prepared by the method, a composition comprising a first component selected from physiological carriers and immune response in a patient (comprising administering to the patient (comprising administering to the patient the above composition) and a diagnositic kt (comprising at least one allgonucleotide cited above, or at least one antibody cited above and adetection reagent comprises a reporter group). The composition and methods are useful in diagnosing preventing and useful in diagnosing preventing and useful is equence is a lung cancer. οĘ The invention relates to an isolated polynucleotide (a) comprising any of the 666 fully defined nucleotide sequences appearing as ADD49269 - ADD49936 and ADD49938, complements of (a); sequences of (a); sequences of (a); sequences of that hybridise to (a) under highly stringent conditions; sequences having at least 75 or 90% identity to (a); or degenerate variants of (a). Also included are an isolated polypeptide ((b) (comprising sequences encoded by the new polynucleotide; any of the 4 amino acid sequences fully defined in the sequence in (a) or (b), an expression vector comprising the above polynucleotide operably linked to an expression control sequence, a host cell transformed or transfected with the above expression vector. antigen cDNA of the invention associated

Sequence 3866 BP; 1268 A; 731 C; 752 G; 1115 T; 0 U; 0 Other;

120 CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC 120 crcadcercreagrageragearracageargreecaceacecregeraacraarrr 180 9 GGAATTCCTTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCCAGGCTGGAGTG 60 GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCCTCCCGGGTTCAAGCGATTCTCCCTGC Gaps ô Length 3866; Indels <u>.</u> و В Score 3866; I Pred. No. 0; ; Mismatches 100.0%; 100.08; Matches 3866; Conservative Similarity 61 61 121 121 Local g ò g à à

CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG 1080 AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA 1140 780 999 AIGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG 960 recensecrearrentininingricanininingabacadescencerresicece 360 420 420 480 480 540 540 crecregaercaaggarcegeergeerceaerreceaaagreecgagarracaggrerg 600 AGICACCAIGCCIGACCITAIAATICITAAGICATITITICIGGICCATITICITICCITAG 660 GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA 840 ACAGIGITICCGCIAAGIGGIGCICTITIAAAIAAAITGGIGGICGIIACAGICAAA TGCAGTTTTCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT AGTCACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTTCTGGTCCATTTCTTTTTT GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA AGGAAGATGAAGTGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACTCCT rrrdgriraarrarrarrararararararaaaacarrrrggaracarrgragar TGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA TTATGATGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAA CTTTTCTATTTAGTAGAGATGGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG ACCTCAGGTGATCCACTTGCCTTGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCGG GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCGG craaritriteratritatriagacacaeerricaccareriececaeecrericaaa **GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGAAGGTAGAATACAAAA** TITGGTTTAAATTAATTATCTAAATATCTAAAAACATTTTTGGATACATTGTTGATGTGA TTATGATGATGACAAACAACCAGAGGACTGGTTGAGTTGTTGTTGCTCAAACTAGAGAAA ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT CTAATTTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCCAGGCTGTTCTCAAA <u> AGGCTGGAGTGCAGTGGGGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT</u> 241 301 481 541 841 961 1021 1201 361 721 721 781 1021 1081 1081 1141 1141 1201 181 241 301 361 421 421 481 541 601 601 199 661 781 841 901 901 961 유 셤 임 g g g 임 à g g ò g ઠે g 8 임 ઠ g ò 셤 8 ò à d ઠે ઠે ò à à à 8 ò

241 GASCANTACTOCTOCATIONAL CONTRIBUTION OF THE ACCOUNT CON
6 H 6 H 6 H 6 H 6 H 6 H 6 H 6 H 6 H 6 H
126 TIGNAGOCCTICCCCOMMINATOCCMANTOMACOMMITTICCTAMATTAMACOM 127 GATTACCTAMATTAMACOMATTAMACOMATTAMACOMATTAMACOM 128 GATTACCTAMATTAMACOMATTAMACOMATTAMACOMATTAMACOMATTAMACOM 129 CARACCAMATTAMACOMATTAMACOMATTAMACOMATTAMACOTTOMACOMATTAMATTA

g

ò

ద ò 셤 δ d ઠે g ò 엄 ö 유

ð

```
treatment of AIDS (acquired immunodeficiency syndrome) or an HIV (human treatment of AIDS (acquired immunodeficiency syndrome) or an HIV (human communodeficiency virus) related disorder. The invention involves assaying the ability of a test compound to modulate the activity or expression of 26 human proteins. These proteins and nucleic acids encoding them comman proteins. These proteins and nucleic acids encoding them comman HIV-related disorder compared to their expression in normal tissues. The invention also relates to the use of the compounds compared to modulate viral replication in a cell and to treat a patient comparing for the diagnostic evaluation and prognosis of various HIV. CC related disorders, and for the identification of individuals exhibiting a cc predisposition to such conditions. The modulatory compounds identified using the method of the invention may be small organic molecules, compared the invention are useful in diagnosing, preventing or treating AIDS or HIV-related disorders. The present sequence represents a human cc polynucleotide which is differentially expressed in AIDS or HIV-related disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                     or treating AIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITITCIAITIAGIAGAGAIGGGGITTCACCAIGITGGITGGTCAGGCTGGTCTTGAACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTAATTTTTGTATTTTTATTAGAGACAGGGTTTTCACCATGTTGGCCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCCTGGACTCAAGGGATCCGCCTCCCACTTCCCAAAGTCCCGAGATTACAGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GEARTHCETTTTTTTTTTTTTTTTTGGGGGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCTTCCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 creaecerereagradereagarracagecargreecaceaeceregeraacraarrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Accreaecrearecacrrecerresecreceaacrecraecarraeacecercaaacre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCTGGAGTGCAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATGGCACAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAGCCTCTCAAGTAGCTGGGATTACAGGCATGTGCCCACCACCCTGGCTAACTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTITICIATITAGIAGAGAIGGGGIITICACCAIGIIGGICAGGCIGGICIIGAACICCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGCTGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACACACCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTAATTTTTGTATTTTTTTTAGAGACAGGGTTTCACCATGTTGGCCCAGGCTGTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
                                     Identifying a compound capable of diagnosing, preventing or tre
or an HIV-related disorder comprises assaying the ability of the
to modulate e.g. 1414, 1481 or 1553 nucleic acid expression or
polypeptide activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 3866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3866 BP; 1268 A; 731 C; 752 G; 1115 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
100.0%; Score 3866;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3866; Conservative 0; Mismatches
                                                                                                                                      Claim 1; SEQ ID NO 15; 167pp; English
  P-PSDB; ADE40437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                          3720
                                                                                                                                                                                                                                                                                                                                                    3780
                                                                                                                                                                                                                                     3660
                                                                                                                                                                                                                                                                                                                                                                                          3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTIGTIGGTCTGAATICTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AIDS; acquired immunodeficiency syndrome; human immunodeficiency virus; HIV-related disorder; differential expression; drug screening; viral replication modulation; diagnosis; prognosis; predisposition; anti-HIV; gene therapy; antisense therapy; human; TTK protein kinase;
                                                                                                                                                      GAAAAAAATGATTTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATTTGGACT
                                                                                                                                                                                              GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                    GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                          ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                             <u> Arcagcaaaaaarrcagrgagarrarcrrraaaagaaaacrgraaaaaragcaaccac</u>
                                                                                                                                                                                                                                                                                                                                                    TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                            TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                               TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG
                                         GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATTAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'product= "Human TTK protein kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human TTK protein kinase (gene ID 1682) DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAATAAAGTTTTGTGGCTAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1026. .3551
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-FEB-2002; 2002US-035739IP.
13-MAY-2002; 2002US-0380249P.
25-UTN-2002; 2002US-0391306P.
27-AUG-2002; 2002US-046287P.
19-SEP-2002; 2002US-0412007P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002US-0417508P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002US-0432318P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADE40436 standard; DNA; 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-FEB-2003; 2003WO-US004246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2003-671808/63.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO2003070883-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-OCT-2002;
10-DEC-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ď,
                                                                            3481
                                                                                                                                                        3541
                                       3481
                                                                                                                                                                                                                                                                          3661
                                                                                                                                                                                                                                                                                                               3661
                                                                                                                                                                                                                                                                                                                                                      3721
                                                                                                                                                                                                                                                                                                                                                                                          3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADE40436;
                                                                                                                   3541
                                                                                                                                                                                              3601
                                                                                                                                                                                                                                     3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3781
                                                                                                                                                                                                                                                                                                                                                                                                                                   3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
ADE40436
```

.5

```
Disclosure; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO2003065006-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-JAN-2003;
                                                                                                                                                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                  protein 1682
                                                                                                                                                                                   29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-AUG-2003
                                                                                                                                                                                                                                                                                                                 prostatic
                       3841
                                                                                                                                                 ADE38368;
                                                                                                            ADE38368
                                                                                                                                                                                                                                                                                                                                                                     Homo
                                                                         RESULT 6

XXX
XXX
XXX
ADE 33368

SECOLD ADE 3368

                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3660
     2820
                                      2820
                                                                           2880
                                                                                                              2880
                                                                                                                                                 2940
                                                                                                                                                                                                                        3000
                                                                                                                                                                                                                                                           3000
                                                                                                                                                                                                                                                                                                3060
                                                                                                                                                                                                                                                                                                                                  3060
                                                                                                                                                                                                                                                                                                                                                                     3120
                                                                                                                                                                                                                                                                                                                                                                                                          3120
                                                                                                                                                                                                                                                                                                                                                                                                                                           3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                                                                              AGAAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAG
                                                                                                                                                                                                                                                                                                                   CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                       TCAAAGATATGTCTTCCTCCAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                              TCAAAGATATGTCTTCCTCCAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCCCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCCATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATTGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCCAAAACAGAGGATATCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATATGTTCTGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATATGTTCTGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTIGITGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTIGITGGICTGAATICTCCTAACTCCATTITGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GITATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAGCAAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGACATCATTITACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG
                             ACCAGTACATCTACATGGTAATGGAAGTGTGGGAAATATTGATCTTAATAGTTGGCTTAAAAA
                                                                                                                                                  TTCACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                      TTCACACACAATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA
                                                                                                                                                                                                                      TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA
                                                                                                                                                                                                                                                           TAGTTGATGGAATGCTAAAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATA
                                                                                                                                                                                                                                                                                                CAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATTATATGCCACCAGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTTCCCGATATTCCAGAGAAGGATCTTCAAGATGTGTTAAAGGTGTTGTTTAAAAGGG
       ACCAGTACATCTACATGGTAATGGAGTGTGGAAATATTGATCTTAATAGTTGGCTTAAAA
                                                                           AGAAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATATGTTAGAGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAATAAAGTTTTGTGGCTAAAATGA 3866
                                      2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3721
                                                                                                                                                  2881
                                                                                                                                                                                                                          2941
                                                                                                                                                                                                                                                             2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3781
                                                                           2821
                                                                                                              2821
                                                                                                                                                                                   2881
                                                                                                                                                                                                                                                                                                3001
                                                                                                                                                                                                                                                                                                                                  3001
                                                                                                                                                                                                                                                                                                                                                                       3061
                                                                                                                                                                                                                                                                                                                                                                                                          3061
                                                                                                                                                                                                                                                                                                                                                                                                                                               3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             쉽
                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \overset{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                          Д
                                                                                                                                               ð
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                         à
```

```
This invention relates to a novel method of treating a human subject having a tumourigenic disorder or angiogenic disorder. caused by aberrant gene expression or activity of an isolated protein, by administering a modulator. The modulator may have cytostatic, antichyroid, antidiabetic or ophthalmological activity. The method is useful for treating a subject
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Treating subject having tumorigenic disorder or angiogenic disorder caused by aberrant polypeptide e.g., N-formylpeptide receptor or nucleic acid, by administering a modulator.
                                                                                                                                                                                                                                                 tumourigenic disorder; anglogenic disorder; aberrant gene expression; aberrant protein activity; cytostatic; antichyroid; antidiabetic; ophthalmological; cancer; brasst cancer; colon cancer; lung cancer; prostatic cancer; disease; disease; diabetic retinopathy; gene; ds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lightcap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ID NO 29; 454pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lescon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
978. .3551
/*tag= a
/product= "Human prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hunter JJ, Macbeth KJ, Tsai F, Williamson MW, Rudolph-Owen LA;
                                                                                                                                                                                        Human protein 1682 gene sequence.
ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-JAN-2002; 2002US-0353600P.
15-MAR-2002; 2002US-0364517P.
00-APR-2002; 2002US-0371075P.
16-APR-2002; 2002US-0371507P.
19-APR-2002; 2002US-0372984P.
19-APR-2002; 2002US-0379955P.
24-MAY-2002; 2002US-0389955P.
31-MAY-2002; 2002US-0389358P.
17-JUN-2002; 2002US-0389358P.
17-JUN-2002; 2002US-0389358P.
15-JUL-2002; 2002US-0391324P.
15-JUL-2002; 2002US-0391324P.
12-JUL-2002; 2002US-0391324P.
12-JUL-2002; 2002US-0391324P.
12-JUL-2002; 2002US-0391324P.
12-JUL-2002; 2002US-0391324P.
12-JUL-2002; 2002US-0391324P.
13-AUG-2002; 2002US-040316F.
12-AUG-2002; 2002US-0403185P.
12-NOV-2002; 2002US-0425456P.
11-DEC-2002; 2002US-0425456P.
3866
                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (MILL-) MILLENNIUM PHARM
   DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2003-646176/61.
P-PSDB; ADE38369.
standard;
```

	AACTAAGCTTGAARAATTTCTGCTGATACTACAGATAATTGGTGAACTGTTAACCAAA TTATGATGATGGCAAACAACCACGGGGACTGGTTGTTGTTGCTCAACTTGAGGAAAA TTATGATGATGGCAAACAACCAGGGGACTGGTTGGTTGTTGCTCAACTAGAGAAA TTATGATGATGGCAAACAACCAGGGGACTGGTTGGTTGGT	1261 TTGAAGCGCTTCCCCCAGATAAATAGCCCAAAATGAGGTTTTGCTAGAATTCAAGTGA 1320	1381 CCAGAGCAAACTGCAAGAAATTTGCTTTTTTTTTTTTTT		1621 TTTCCGGTTCACTTGGGCATTTACAGAACAACAACAGTTGTGATTCCAGAGGACAGA 1680	1741 ACCGGAATTCATTGAGACAAACTAAAACTAAAACAGTCATGCCCCATTTGGAAGAGTCC 1800	1861 GTTTATGABAAGAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCTGGATCTA 1920 1861 GTTTATGABAAGACAAACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTA 1920 1921 AACCAAGTGGAAATGATCCTGTGAATTAAGAAATTTAAAGTTGTTCAAAATAGTCATT 1980 1921 AACCAAGTGGAAATGATCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATT 1980 1921 AACCAAGTGGAAATGATCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATT 1980 1981 TCAAGGAACCTCTGGTGTCAGAAAAAATGTCTCAAATAATAATAATAATAATAATAATAATAATAATAA
8 8 8 8 8	4 6 6 6	8 8 8	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	8 6 6 6	3 8 3 8	6666	8 8 8 8
having a cancer (for cancer) a present a protein 1 sequence Query Match Best Local s Matches 3866	09 1 06AATTCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT		301 TGCCTGGCTGATTCTTTTTTTTTTGAAACTCTAGAAACTG 301 TGCCTGGCTGATTCTTTTTTTTTTTTTTTTTTTTTTTTT	361 AGGCTGGAGTGCTGCGATCTTGGCTCACTATAACCTCACCTCCTGGTTTCAAGT 421 GATCCTCCCACTTTAGCCTCCTGAGTAGTTACAGGGTGCACCTCCTGGTTTTCAAGT 621 GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCGG 631 GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCGG 642 CTAATTTTGTATTTTATTAGAACAGGTTTTACACCAGGCTGTTGCCAGGCTGTTCTCAAA 643 CTAATTTTGTATTTTATTAGAACAGGGTTTTCACCATGTTGGCCAGGCTGTTCTCAAA	DD 481 CTAATITITGTAITTTTAITAGAGAATGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA 540 OY 541 CTCCTGGACTCAAGGGATCCGCCTGCCTCCCAAAGTCCCGAGATTACAGGGTGT 600 DD 541 CTCCTGGACTCAAGGGATCCGCCTGCCTCCCACTTCCCGAGATTACAGGTGTG 600 OY 601 AGTCACCATGCCTGATATTCTTAAGTCATTTTTTTTCTGGTCCATTCTTCCTTAG 660 ON CATACACATGCCTGACCTTATAAATTCTTAAGTCATTTTTTTT	661 GGTCCTCACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA 661 GGTCCTCACAAATCTGCATTAGGCGGTACAATAACTCTTAACTTCATGATTCACAAA 661 GGTCCTCACAACAACTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA 721 AGGAAGATGAATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCACTGCACCCT 721 AGGAAGATGAATTCATGATTTAGAAAAGGGGAAGTAGTAAGCCCACTGCACCCCT 721 AGGAAGATGAATTCATGATTTAGAAAAGGGGAAGTAGTAAGCCCACTGCACACCCT	721 781 781 841 901

g & g

09 3121 GTGATGGTTGGTCCTTAGGATGTATTTTGTACTATAGGGGAAACACCATTC 3180 09 3101 AGCAGGTTAGTCGTTTGATTTTTTAGATTTAGATTAGGGGAAACACCATTC 3180 0101 AGCAGATAATTAATCAGATTTTTTAAATTAGATTTGATCGGGAAACACCATTC 3180 0211 AATTCCCGATAATTACAGATTGATTTGAAATTCAGGGAAACACCATTTAAAAACGG 3100 0211 AATTCCCGATAATTCAGAAAAATTCTAAAATTCAGAAATTGATCTTAAAAACGG 3100 0211 AATTCCCGATAATTCAGAAAAATTCTCTAAATTCAAAATTGATCTTAAAAAACGG 3100 03101 ACCCGAAAACAGAAAAATTCCAGAAAAATTCTCTAAAATTCAAAATTCAAAATTCAAAAAAAA	RESULT 7 ADE31644 standard; DNA; 3866 BP. XX AC ADE31644; XX AC ADE31644; XX DT 29-JAN-2004 (first entry) XX Mularteriosclerotic; cardiant; vasotropic; antiinflammatory; XX XX Autiarteriosclerotic; cardiant; vasotropic; antiinflammatory; XX XX XX XX XX XX XX XX XX
1981 TCAAGGAACTCTGGTGCAAATGAAATTCTGAAATTATATATA	2821 AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATTGTTAGAGGCAG 2880 2821 AGAAAAATCCATTGATCCATGGGAACGCAAGAGTTACTGGAAAAATTGTTAGAGGCAG 2880 2821 AGAAAAATCCATTGATCCATGGGAACGTTACTGGAAAAATTGTTAGAGGCAG 2880 2881 TTCACACAATCCATCAACATGGGATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGA 2940 2941 TAGTTGATGGAATGCTAAAGCATTGATTTTGGGATTGCAAACCAGCTAACTTTCTGA 2940 2941 TAGTTGATGGAATGCTAAATGATTTTTGGGATTGCAAACCAAATGCAACCAGTA 3000 2941 TAGTTGATGAATGTTAAAGATTCTTAGTTTTTGGGATTGCAAACCAATGCAACCAGTA 3000 3001 CAACAAGTGTTGAAAGATTCTCAGGTTGGCACAGTTAATTATTGCCACCAGAAGA 3060 3001 CAACAAGTGTTGATAAAGATTCTCAGGTTGGCACAGTTAATTATTGCCACCAGAAGCAA 3060 3001 TCAAAGATTGTTCTCCCAGAGAGAATGGGAAATGCCACCAGAA 3120 3061 TCAAAGATATGTTCCTCCCAGAGAAATGGGAAATCAAAGATAAGCCCCAAAA 3120 3061 TCAAAGATATGTTCTCCCCAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA 3120 3061 TCAAAGATATGTTTCCTCCCAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA 3120 3061 TCAAAGATATGTTTCCTCCCAGAGAAATGGGAAATCTAAGTCAAAGATAAGCCCCAAAA 3120

 $\stackrel{>}{\circ}$ 엄 ò g à g ò g Š a à g ò g à Dp

```
treating a cardiovascular disorder. The present invention identifies the differential expression of 1682, 6193, 7771, 14395, 29002, 33216, 4726, 69292, 21656, 33427, 2402, 7747, 1720, 9151, 60491, 1371, 7077, 33207, 1419, 18036, 16105, 38650, 14245, 1425, 6856, 32394, 3344, 2656, 2815, 16032, 18610, 8165, 2448, 2445, 64654, 8437, 8912, 2813, 2815, 10532, 18610, 8165, 2448, 2445, 64624, 8437, 8912, 2868, 283, 2854, 2647, 1799, 2668, 283, 2854, 2947, 15992, 2094, 2252, 3474, 9792, 15400, 1452 or 6858 genes in cardiovascular disease states. The methods are useful in diagnosing, preventing and treating cardiovascular disorders, such as atherosclerosis, cardiac hypertrophy, ischaemia, reperfusion injury, restenosis, arterial inflammation, vascular wall remodeling, coronary microembolism, tachycardia, bradycardia, pressure overload, aortic bending, coronary artery limited to, valvular degeneration caused by calcification, rheumatic heart disease, endocarditis, or complications of artificial valves, atrial fibrillation, long-QT syndrome, congestive hypertension, atrial fibrillation, artial falluter, pericardial disease, including but not limited to, pericardial effusion and pericardial cardiomyopachia, expericardial disease, cardiomyopachia, expericardial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Identifying a compound capable of treating a cardiovascular disorder (e.g. atherosofarcais) comprises assaying the ability of the compound to modulate the expression or activity of e.g. 1682, 6169 or 6193 polypeptide or nucleic acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              coronary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cardiomyopathy, myocardial infarction, ocronary artery disease, coronary artery spasm, ischaemic disease, arrhythmia, sudden cardiac death and cardiovascular developmental disorders. The methods may also be used for identifying compounds that modulate cardiovascular disorders. Sequences given in ABB31644-ADB31769 represent the genes and proteins that may be regulated by a compound of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                   Donaghue
                                                                                                                                                                                                                                                                                                                                                                                                                 Acton SL,
                                                                                                                                                                                                                                                                                                                                                                                                               Chun M, Galvin KM, Healy A,
N, Perodin J, Rodrigue-Way A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; SEQ ID NO 1; 328pp; English.
                                                                                       2002US-0353224P.
2002US-0364529P.
2002US-037386IP.
2002US-038680P.
2002US-0388080P.
                                                                                                                                                                                                    2002US-0394130P.
2002US-0494797P.
2002US-0405450P.
2002US-0405450P.
2002US-0408070P.
                                                                                                                                                                                                                                                                                                                  2002US-0431042P.
2002US-0431079P.
                                                     2003WO-US002571
                                                                                                                                                                                                                                                                                                                                                                            (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2003-731468/69.
P-PSDB; ADE31645.
                                                                                                                                                               12-JUN-2002; 2
24-JUN-2002; 2
10-JUL-2002; 2
21-AUG-2002; 2
23-AUG-2002; 2
64-SEP-2002; 2
04-SEP-2002; 2
                                                     29-JAN-2003;
                                                                                                                           19-APR-2002;
29-APR-2002;
                                                                                                                                                                                                                                                                                                                                      05-DEC-2002;
                                                                                                                                                                                                                                                                                                                    05-DEC-2002;
                                                                                                                                                                                                                                                                                                                                                                                                             Logan TJ,
Stagliano 1
```

9 GGAATICCTITITITITITITITITIGAGATGGAGTITCACTCTTGTTGGCGGCTGGAGTG GGAATTCCTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTG Gaps ; 0 Length 3866; BP; 1268 A; 731 C; 752 G; 1115 T; 0 U; 0 Other; Indels Query Match 100.0%; Score 3866; DB 9; Best Local Similarity 100.0%; Pred. No. 0; Matches 3866; Conservative 0; Mismatches 0;

à

9

1141 TTATGATGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAA 1200

CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG 1080 AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA 1140 180 180 300 360 360 420 420 480 480 540 540 009 660 999 780 720 CTTTICTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG AGGCTGGAGTGCAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT CAATGGCACAATCTCAGCTTACTGCAACCTCCGGCTTCCAAGCGATTCTCCTGC creaccreteagrageragarracagecargrecaccacceregeraarrr CTTTTCTATTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTG ACCTCAGGTGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTG reccheectearrentrationientesarintrasascaectecerresteece GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCGG GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA ACCICAGGIGALCCACTIGCCITGGCCTCCCAAAGIGCTAGGATTACAGCCGTGAAACTG TGCCTGGCTGATTCTTTTTTGTTGGATTTTTGAAACAGGGTCCCCTTGGTCGCCC AGGCTGGAGTGCAGTGGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGT GATCCTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACACCACCGG CTAATTTTTGTATTTTTATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA CTCCTGGACTCAAGGGATCCGCCTGCCTCCACTTCCCAAAGTCCCGAGATTACAGGTGTG AGTCACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTCTGGTCCATTTCTTCCTTAG GGTCCTCACAACAAATCTGCATTAGGCGGTACAATAATCCTTAACTTCATGATTCACAAA. GGATGATGATCCTAAATCCAGATACAGTAAAATGGGGTATGGGAAGGTAGAATACAAAA TTTGGTTTAAATTAATTATCTAAATATCTAAAAACATTTTTGGATACATTGTTGATGAGA ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG AACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAA CTAATHTHGTATHTHATTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGTTCTCAAA CTCCTGGACTCAAGGGATCCGCCTGCCACTTCCCAAAGTCCCGAGATTACAGGTGTG AGTOACCATGCCTGACCTTATAATTCTTAAGTCATTTTTTTTTGGTCCATTTTCTTCCTTAG AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCCACTGCACACTCCT <u> AGGAAGATGAAGTGATTCATGATTTAGAAAGGGGAAGTAGTAAGCCCCACTGCACACTCCT</u> **GGATGATGATCCTAAATCCAGATACAGTAAAAATGGGGTATGGGGAAGGTAGAATACAAAA** ATGTAAGACTGTACAGACTTCCTAGAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAG TGCAGTTTTCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATT TGCAGTTTTCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACTATTGATT TITGGTTTAAATTAATTATCTAAATATCTAAAACATTTTTGGATACATTGTTGATGTGA CCATAATGAACAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATG 241 61 61 121 181 181 241 301 301 361 361 481 181 541 1021 1081 1081 421 421 541 601 601 661 661 721 721 781 841 841 901 901 961 1021 781 961

> ф à

à g Š g g $\overset{\sim}{0}$ g ò 엄 ò g δ Dp ò

ò

ö

us-10-081-119-13.rng

```
TATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGGCATTTAC 1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAATAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAAGCCAGGTTTTTATATG 810
                                                                                                                                                                                                                                                  The present invention relates to novel proteins and their coding sequences (ADG37168-ADC37455), which activate nuclear factor kappa B (NF-kappaB). The proteins and their coding sequences are useful for treating a disease associated with NF-kappaB activation, such as inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases, or ischaemic disorders.
                              B (NF-kappaB)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  925 GAAAACAGTTTGGGTTCCATCTTTTCATTTCCCCAGTGCAGTTTTCTGTAGAAATGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGAGGATTTAAGTGCCAGAGAATTGACAATTGATTCCATAATGAACAAAGTGAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGATACTACAGATAACTGGGGAACTGTTAACCAAATTATGATGATGGCAAACACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31 GAAAGGAGTTTGGGTTCCATCTTTTCATTTCCCCAGCGCAGCTTTCTGTAGAATGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cccaccarrangercccacacacantrcacarrantccarangancaacaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAAAAATAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAAATTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAACAACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCCGCTAAGTGATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAGCCAGATGCACGTGACTACTTTCAAATGGCCAGAGCAAACTGCAAGAAATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTITIGITICATATATCTTTGCACAATTTGAACTGTCACAAGGTAATGTCAAAAAAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCCGCTAAGTGATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTAAATTAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCAGATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       criticiticatataticititiccaciatiticaacicicacaaggiaaticicaaaaaaagia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTGGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTGGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAATAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAAGCCAGGTTTTTATATG
                                                            useful for treating inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITITAAATTAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCAGATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAAGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCTGCGGAATTTAAACCTCCAAAAAAGCAGCTGCTTTCAGAGGAGGAAAAGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGGCATTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75.1%; Score 2909.2; DB 9; Length 2975; 99.5%; Pred. No. 0; ive 0; Mismatches 13; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2975 BP; 1053 A; 527 C; 560 G; 835 T; 0 U; 0 Other;
                              that activates nuclear factor
                                                                                                                                                                                        Claim 4; SEQ ID NO 3; 938pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 2928; Conservative
                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                       New purified useful for tr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         691
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      장염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THATGGCACTGTATATATTGTAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC 3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTATAAAAAACTTTG 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGACATCATTTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAACTTTG 3840
                                                               CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGATGTTCTGGGCC
                                                                                                                                                                                               AACTTGTTGGTCTGAATTCTCCCTAACTCCATTTTGAAAGCTGCTAAAACTTTTATATATGAAC
                                                                                                                                                                                                                                                                                                                 ACTATAGTGGTGAAAGTCATAATTCTTCATCCTCCAAGACTTTTGAAAAAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAGCAAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACCAC
                          CTCATCCAGTTAACCAAATGGCCAAGGGAACCACTGAAGAAATGAAATATGTTCTGGGCC
                                                                                                                                                   AACTTGTTGGTCTGAATTCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATATTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAACTGTAAAAATAGCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                         GAAAAAAATGATTTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAAATATTTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTATACTCTTGAATCCCTGTGGAAATCTACATTTGAAGACAACATCACTCTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATGGCACTGTATATATAGACTTGTTTTCTCTGTTTTATGCTCTTGTGTAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nuclear factor kappa B; NF-kappaB; inflammation; autoimmune disease; cancer; infectious disease; bone disease; AIDS; neurodegenerative disease; ischaemic disorder; Antiinflammatory; Immunomodulator; Cytostatic; Antimicobial; Osteopathic; Anti-IV; Neuroprotective; Nootropic; Cardiant; Gene therapy; human; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nuclear factor kappa B (NF-kappaB) activating gene, SEQ ID 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAATAAAGITITGIGGCTAAAATGA 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-DEC-2001; 2001JP-00368692.
05-DEC-2001; 2001JS-0335829P.
05-DEC-2002; 2002JP-00291302.
04-OCT-2002; 2002JS-0415769P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               03-DEC-2002; 2002WO-JP012644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matsuda A, Muramatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2003-505282/47.
P-PSDB; ADC37171.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ASAH ) ASAHI KASEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2003048202-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12-JUN-2003
                                                                                                                                                   3421
                                                                                                                                                                                                                                                                                                                                         3481
                                                                                                                                                                                                                                                                                                                                                                                                      3541
                                                                                                                                                                                                             3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3661
                                                                                                                                                                                                                                                                            3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADC37170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADC37170
XX
AC ADC3
XX
DY 18-D
XX
XX
Nucl
XW
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
                                                                                                                                                ò
                                                                                                                                                                                                                                                        \triangle \trian
                                                                                                                                                                                                                                                                                                                                                                              ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                          DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                상 점
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{>}{\circ}
```

1044

0

150

1104

1164

1224

330

1284

1344

450

1404

1464

1524

1991 AGTOGGABATHTTGATTTANTAGTTGGCTTAAAAAAAAATCCATTGATCCATGGG 1950	TTAICTTTAAAGAAAACTGTAAAATAGCAACCACTTATGGCACTGTATATTGTAGA 374
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	6868686
1705 GAGAGACAACACCACCACAACATTCCACAAATTCACTCAC	CATTITAAACAGHAGAAGAGGAGTTCAAGCAAGGATTTTAAACAGAAGGATTTTTTTT

GA 2971

2970

엄

```
The present sequence for human diagnostic and therapeutic (dithp) cDNA sequence #14 is 1 of 71 (AAS03012-AAS03082) novel sequences described in the invention. The present sequence (Incyte ID No: 3324652dec) encodes an intracellular signalling molecule. The dithp polymucleotides may be used to diagnose a condition disease or disorder associated with human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Russo FD, Spiro PA, Banville SC;
Cohen HJ, Rosen BH, Shah P, Chalup MS;
Yu JY, Greenawalt LB, Panzer SR, Roseberry AM;
TF, Yap PE, Stockdreher TK, Amshey S;
                                                                                                                                   Human diagnostic and therapeutic molecule, dithp; gene therapy; thalassemia; cardiovascular disorder; cell proliferative disorder; cancer; neurodegenerative disorder; autoimmune disorder; infectious disorder; infilammatory disorder; developmental disorder; Incyte ID number 3324652dec; intracellular signalling molecule; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel diagnostic and therapeutic polynuclectides, used in disease diagnosis and for gene therapy of conditions such as cancer and thalassemia.
                                                                                                          Human diagnostic and therapeutic (dithp) cDNA sequence #14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Page 260-261; 299pp; English.
                            ВЪ
                            AAS03025 standard; cDNA; 2980
                                                                                                                                                                                                                                                                                                                           99US-0155939P

99US-015659P

99US-015656P

99US-0156624P

99US-0167410P

99US-0167410P

99US-0167517P

99US-016751P

99US-016752P

99US-016752P

99US-016752P

99US-016752P

99US-016752P

99US-0167543P

99US-0168429P

99US-0168429P

99US-0168429P

99US-0168429P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jones AL, Yu JY
Chen W, Liu TF,
                                                                                                                                                                                                                                                                                                    2000WO-US025643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (INCY-) INCYTE GENOMICS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lincoln SE,
Dufour GE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-281607/29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bratcher SR,
Hillman JL, J
Wright RJ, Ch
Fong WT;
                                                                                                                                                                                                                                                                                                                           23 - SEP - 1999,
24 - SEP - 1999,
28 - SEP - 1999,
28 - SEP - 1999,
28 - SEP - 1999,
24 - NOV - 1999,
                                                                                                                                                                                                                                                                                                   19-SEP-2000;
                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-NOV-1999;
24-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-NOV-1999
30-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hodgson DM,
                                                     AAS03025
RESULT 9
               AAS03025
```

```
1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1616
             acids. Dithy polynucleotides may used to generate hybridisation probes for use in chromosomal mapping. Polypeptides (DITHP) encoded by dithy are used to screen for molecules which bind to them and modulate their activity. Dithy polynucleotides can be used for gene therapy of disorders such as severe combined immunodeficiency syndrome (SCID), cystic fibrosis, thalassemia, haemophila resulting from Factor VIII or IX deficiencies, cardiovascular disorders e.g familial hypercholesterolaemia disorders, autoimmune/inflammacry disorders, infectious disorders and developmental disorders. The antibodies can be used to analyse protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                   61
presence of similar nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATTCCATAATGAACAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGACTACTAAAGCCAGGTTTTTATATGGAGAGAACATGCCACCACAAGAGGAGAAATA
                                                                                                                                                                                                                                                                                                                                                897 GIGAATGIAAGACIGIACAGACITCCIAGAAAACAGITITGGGITCCATCITITCATTICC
                                                                                                                                                                                                                                                                                                                                                                                    2 GCGACGGGGAAATTCAAACGTGTTTGCGGAAAGGAGTTTGGGTTCCATCTTTTCATTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTGCAGTTTTCTGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 CAAATTATGATGGCAAACAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGCCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAATTTAAAACCTCCAAAAAAGCAG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGCGCAG-TITCTGTAGAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGAACTAAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGAACTAAGCTTGAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAATTATGATGATGCCAAACCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAATTGAAGCGCTTCCCCCAGATAAATATGGCCCAAAATGAGAGTTTTGCTAGAATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAATTGAAGCGCTTCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 GTGAGATTTGCTGAATTAAAAGCTATTCAAGAGCCAGATGATGCAGCGTGACTTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGCCAGAGCAAACTGCAAGAAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTCACAAGGTAATGTCAAAAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTCACAAGGTAATGTCAAAAAGTAAAACAACTTCTTCAAAAAGGTGAAAAGGTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGTACCACTAGAAATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCTTTCAGAGGAGAAAAGAAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCATTTTCCGGTTCACTTGGGCATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 GATTCCATAATGAACAAAGTGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTTTCAGAGGAGGAAAAGAAGTTTATCAGCATCTACGGTATTAACTGCCCAAGAA
                                                                                                                                                                                                                                                                                                             ~
                                                                                                                                                                                                                                                                          DB 4; Length 2980;
                                                                                                                                                                                                                                     Sequence 2980 BP; 1057 A; 527 C; 560 G; 836 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                             25; Indels
used to identify the
                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                          75.2%; Score 2906; 99.1%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                     expression levels
                                                                                                                                                                                                                                                                                            Best Local Simi
Matches 2943;
                                                                                                                                                                                                                                                                                                                                                                                                                       957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1017 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
d
                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

		GCAGTTCACACATCCATCAACATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTT 29	2937 CTGATAGTTGATGGAATGCTAAAGCTAATTGATTTTTGGGATTGCAACCAATGCAACGA 2996 	2997 GATACAACAAGTGTTGTTAAAGATTCTCAGGTTGGCACAGTTAATATATGCCACCAGAA 3056 	3057 GCAATCAAAGATATGTCTTCCAGAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCC 3116	3117 AAAAGTGATGTTTGGTCCTTAGGATGTATTTTGTACTATATGACTTACGGGAAAACACCA 3176 	3177 TITCAGCAGATAATTAATCAGATTTCTAAATTACATGCCATAATTGATCCTAATCATGAA 3236 	3237 ATTGAATTTCCCGATAITCCAGAGAAGATCTTCAAGATGTTAAAGTGTTGTTTAAAA 3296 	3297 AGGACCCAAACAGAGGATATCCATTCCTGAGCTCGCTCATCCATATGTTCAAATT 3356 [3357 CARACTCATCAGTTAACCAATGGCCAAGGGAACCACTGAAGAATGAAT	3417 GGCCAACTIGITGGICTGAATTCTCCTAACTCCATTTGAAAGCTGCTAAAACTTTAIAT 3476 	GAACACTAIAGTGGTGGTGAAAGTCATAATTCTTCATCCTCCAAGACTTTTGAAAAAAA 	AGGGAAAAAATGITTGCAGTTATTCGTAATGTCAGATAGGAGGTATAAATATTG 	GACTGTTATACTCTTGAATCCTGTGGAATCTACATTTGAAGAACAACATCACTCTGAAG 365 	TGTTATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAACTGTAAAAATAGCAA 371 	3717 CCACTIAIGGCACIGIAIAITAITAGACTIGITITICICIGITITIAIGCTCTIGIGIAAT 3776 2820 CCACTIAIGGCACIGIAIAITGIAGACTIGITITICICIGITITIAIGCTCTIGIGIAAT 2879	3777 CTACTIGACATCAITTTACTCTTGGAATAGTGGGTGGATAGCAAGTATATTCTAAAAAAC 3836 	3837 TITGTAAATAAGTITIGTGGCTAAAATGA 3866
	දු පු	දු පු	S &	Š d	δγ qu	& 8	& &	S G	SP GG	& 8	oy G	oy B	Sp. 6y	දි පි	S S	& 43	S G	Š a
781 CAGACTACTAAAGCCAGGTTTTTATATGGAGAACATGCCACCACAAGATGCAGAATA 840	1737 GGTTACCGGAATTCATTGAGACAAACTAACAAACTAAACAGTCATGCCCATTTGGAAGA 1796 	1797 GTCCCAGTTAACCTTCTAAATAGCCCAGATTGTGAAGACAGAC	1857 CCTTGTTTTATGAAAGACAAACCTCTAGATCGCGGAGATTTGGTTGTGCCTGGA 1916 	AAAATAGT	CATTICAAGGAACCICIGGIGICAGAIGAAAAGAGIICIGAACTIAITAITACIGAITCA 203 	2037 ATAACCCTGAAGAATAAAACGGAATCAAGTCTTCTAGCTAAATTAGAAGAAACTAAAAGAG 2096 	2097 TATCAAGAACCAGAGGTTCCAGAGAGTAACCAGAAACAGTGGCAAGCTAAGAGAAAGATCA 2156 	2157 GAGTGTATTAACCAGAATCCTGCTGCATCTTCAAATCACTGGCAGATTCCGGAGTTAGCC 2216 	CGAAAAGTTAATACAGAGCAGAACATACCACTTTGAGCAACCTGTCTTTTCAGTTTCA 	2277 AAACAGTCACCACTATATCAACATCTAAATGGTTTGACCCAAAATCTATTTGTAAGACA 2336 	CCAAGCAGCAATACCTTGGATGATTACATGAGCTGTTTTAGAACTCCAGTTGTAAAGAAT 239	rccacctgcttgtcagttgtcaacaccttattggccaacctgcctg	2457 CAACAGCATCAAATACTTGCCACTCCAĆTTCAAAATTTACAGGTTTTAGCATCTTCTTCA 2516 	2517 GCAAAIGAAIGCAITICGGITAAAGGAAGAAITIAITICCAIAITAAAGCAGAIAGGAAGI 2576 	2577 GGAGGTTCAAGCAAGGTATTTCAGGTGTTAAATGAAAGAAA	2637 TATGTGAACTTAGAAGAAGCAGATAACCAAACTCTTGATAGTTACCGGAACGAAATAGCT 2696 	TATITGAATAAACTACAACACAGGATAAGATCATCCGACITTATGATTATGAAATC	2757 ACGGACCAGTACATCTACATGGTAATGGAGTGTCGAAATATTGATCTTAATAGTTGGCTT 2816

```
The invention relates to a method for detecting a lung cancer-associated transcript in a cell from a patient, comprising contacting a biological sample from the patient with a polymucleotide that selectively hybridises to a sequence that is at least 80 % identical to a gene that exhibits in increased or decreased expression in lung cancer samples. Lung cancer-associated polymucleotides and polypeptides are used for identifying a compound that modulates a lung cancer-associated polypeptide, for inhibiting proliferation of a lung cancer-associated cell to treat lung cancer in a patient and for treating a mammal having lung cancer by a caministering a modulatory compound identified. The methods are useful for treating lung cancer, such as small cell lung cancer, non-small cell ung cancer or other benign or precancerous lesions, e.g. atelectasis, hypersensitivity pneumonitis, interstitial pulmonary disease, fibrosis, hypersensitivity pneumonitis, interstitial pulmonary disease, fibrosis, bronchiectasis. The genes, polymucleotides and polypeptides are useful cor diagnostic purposes and as targets for screening for therapeutic compounds that modulate lung cancer, such as antibodies. Sequences
                                                                                                                                                                                          Lung cancer-associated polynucleotide, gene, ds, cytostatic, emphysema, antinflammatory, antiasthmatic, non-small cell lung cancer; atelectasis, small cell lung cancer, benign lesion, precancerous lesion, bronchitis, chronic obstructive pulmonary disease, hypersensitivity pneumonitis; interstitial pulmonary fibrosis, fibrosis, asthma, bronchiectasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Detecting a lung cancer-associated transcript in a cell from a patient for treating lung cancer, by contacting a biological sample from the patient with a polynucleotide that exhibits increased or decreased expression in lung cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2574 BP; 926 A; 463 C; 488 G; 697 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66.5%; Score 2569.2; 99.9%; Pred. No. 0;
                                                                                                                                                      cancer-associated polynucleotide #317.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 22; Page 433-434; 453pp; English.
                                     뮴.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-APR-2001; 2001US-0284770P.
10-MAY-2001; 2001US-0295492P.
09-NOV-2001; 2001US-0339245P.
13-NOV-2001; 2001US-0350666P.
29-NOV-2001; 2001US-0334370P.
12-APR-2002; 2002US-0332246P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EOS BIOTECHNOLOGY INC
                                     ABX76453 standard; DNA; 2574
                                                                                                                                                                                                                                                                                                                                                                                                                                     18-APR-2002; 2002WO-US012476
                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 99.9
Matches 2571; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2003-093161/08.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Murray R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; ABU56724.
                                                                                                                                                                                                                                                                                                                                                       WO200286443-A2
                                                                                                                                                                                                                                                                                                                    Unidentified
                                                                                                                 02-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                               31-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       invention
                                                                           ABX76453;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (EOSB-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Aziz N,
                                                                                                                                                           Lung
RESULT 10
                  ABX76453
```

```
2117
                                      1097
                                                                                         1157
                                                                                                                                            1217
                                                                                                                                                                                              1277
                                                                                                                                                                                                                                                 1337
                                                                                                                                                                                                                                                                                                    1397
                                                                                                                                                                                                                                                                                                                                                      1457
                                                                                                                                                                                                                                                                                                                                                                                                         1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1997
                                                                120
                                                                                                                                                                    240
                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rcagargalalgaerrchgaecrratrarrachgarrcaaraacccrgaagaaraaacg
AGAGACATTAAAAATTAAAAATGAAGACCTTACTGATGAACTAAGCTTGAATAAA
                                                       GATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCA
                                                                                                                                                                                                                                                  GATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAA
                                                                                                                                                                                                                                                                       GATAAATATGGCCAAAATGAGGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGAGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATITACAGAATAGGAACAACAGTIGIGIGIGATICCAGAGGACGACAGACTACTAAAGCCAGGITT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIATATGGAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTCATTGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAACTAACAAAACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCTTCTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAACTAACAAAACTAAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCTTCTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCTGTGAATTAAGAAATTTAAAGTCTGTTCAAAATAGTCATTTCAAGGAACCTCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAATCAAGTCTTCTAGCTAAATTAGAAGAACTAAAAGAGTATCAAGAACCAGAGGTTCCA
                                                                                         ATTICTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAAC
                                                                                                                 ATTTCTGCTGATACTAGATAACTCGGGAACTGTTAACCAAATTATGATGATGGCAAAC
                                                                                                                                                                     AACCCAGAGGACTGGTTGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCCGCTAAGT
                                                                                                                                                                                              GATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCA
                                                                                                                                                                                                                                                                                                    GCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAACTGCAAG
                                                                                                                                                                                                                                                                                                                            GCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAACTGCAAG
                                                                                                                                                                                                                                                                                                                                                      AAATTTGCTTTTGTTCATATATCTTTTGCACAATTTGAACTGTCACAAGGTAATGTCAAA
                                                                                                                                                                                                                                                                                                                                                                               <u> aaarrrecrirrerrarararcrirrecacaarrreaacrercacaaegraarercaaa</u>
                                                                                                                                                                                                                                                                                                                                                                                                         AAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                <u> aaaagtaaacaacttcttcaaaaagctgtagaacgtggagcagtaccactagaaatgctg</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u> AAGAATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTCACTTGGG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATITACAGAATAGGAACAACAGTIGIGAITCCAGAGGACAGACTACTAAAAGCCAGGITT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTTATGAAAAGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCCAGATTGTGATGTGAAGACAGATGATTCAGTTGTACCTTGTTTTATGAAAAGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCTCTAGATCAGAATGCCGAGATTTGGTTGTGCCTGGATCTAAACCAAGTGGAAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAGATGAAAAGAGTTCTGAACTTATTATTACTGATTCAATAACCCTGAAGAATAAAACG
                                                                                                                                          1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                           1098
                                                                                                                                              1158
                                                                                                                                                                                                                                                                                                                                                         1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2058
                                                                                                                   121
                                                                                                                                                                        181
                                                                                                                                                                                                                                                    1278
                                                                                                                                                                                                                                                                                                      1338
                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                            1458
                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021
                                                                  61
                                                                                                                                                                                                  1218
                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         961
                                                                                                                                                                                                                                                                             301
                                                            임
                                                                                        δ
                                                                                                               g
                                                                                                                                            à
                                                                                                                                                                 g
                                                                                                                                                                                          ò
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                        9
9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                        ò
```

Gaps

. 0

3; Indels

0; Mismatches

	781 CAAACTAACAAACTAAACAGTCATGCCCATTTG 1818 AGCCCAGATTGTGATGTGAAGACAGATGATTCAG 841 AGCCCAGATTGTGATGTGAAGACAGATGATTCAG 1878 ACCTTAGATCACACAGATTGGTTGTGC 1878 ACCTTAGATCAGAATGCCGAGATTTGGTTGTGG 901 ACCTCTAGATCAGAATGCCGAGATTTGGTTGTGGTGGAATTTGGTTGTGGTGAATGAA	961 TCCTGTGAATTAAGAAATTTAAAGICTGTTCAAA 1998 TCAGATGAAAAGAGTTCTGAACTTATATATTACTG 1021 TCAGATGAAAAGAGTTCTGAACTTATATTACTG		110 GAGGTAACCAGAAACAGTAGCAATCTAAGAGAA 1141 GAGAGTAACCAGAAACAGTGGCAATCTAAGAGAA 2178 GCTGCATCTTCAAATCACTGGCAGATTCCGGAGT 1201 GCTGCATCTTCAAATCACTGGCAGATTCCGGAGT	2238 AAACATACCACTTTTGAGCAACCTGTCTTTTCAG	2298 ACATCTAAATGGTTTGACCCAAACTCTATTGTA 1321 ACATCTAAATGGTTTGACCCAAAATCTATTTGTA 2358 GATTACAAGGCTGTTTTAGAACTCCAGTTGAA							1741 CACAGTGATAAGATCATCGACTTTATGATTATG		2838 CCATGGGAACGCAACAATTACTGGAAAATATATTATTACTGGAAAATATTATTACTGGAAAATATTATTACTGGAAAAATATTATTACTGGAAAAATATTATTACTGGAAAAATATTATTATTACTGGAAAAATATTATTACTGGAAAAATATTATTACTACTGGAAAATATTATTATTACTACTAGAAAATATTATTATTACTACTACTACTACTACTACTACTAC
_	8 8 8 8 8	d d	2 2 3	, d & d	d d	중 음· ð 	3 名 ò	i 8 ò		7 qq 20	DP O	. A &	ପୁ ପୁର	- dg (o d
	biological sample from the patient with a polynucleotide that selectively hybridizes to a sequence at least 80% identical to any of one of 80 nucleic acid sequences given in the specification. The method is useful in diagnosing ovarian cancer and in identifying and using agents and/or trargets that inhibit ovarian cancer. The nucleic acid molecule, polypeptide and the antibody may also be used in detecting ovarian cancers, monitoring and early detection of relapse following treatment, monitoring response to therapy, selecting patients for post-operative chemotherapy or radiation therapy, in selecting mode of therapy, detection of pre-cancerous lesions, determining tumour prognosis, early detection of pre-cancerous lesions,	ää	Marches 2571; Conservative 978 ATGGATCTA 978 ATGGAATCCGAGGATTTA 1 ATGGAATCCGAGGATTTA		121 1158 181	1218 GATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCA 1277 241 GATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCAATTGAAGCGCTTCCCCCA 300	1278 GATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGAATTAAAA 1337 	1338 GCTATTCAAGAGCCAGATGATGCACGTGACTTCAAATGGCCAGAGCAAACTGCAAG 1397), 1398 AAATTIGCTTTIGTCCATATGCCCAATTIGAACTGTCACAAGGTAATGCAAA 1457 	1458 AAAAGTAAACAACTTCTTCAAAAAGCTGTAGAACGTGGAGCAGTACCACTAGAAATGCTG 1517 	1518 GAAATIGCCCIGCGGAATTAAACCICCAAAAAAGGAGCIGCTITCAGAGGAAGAAGAAAG 1577	1578 AAGAAITTAICAGCAICTACGGTAITAACTGCCCAAGAATCAITTICCGGTICACTTGGG 1637 	1638 CATTTACAGAATAGGAACAACAGTTGTGATTCCAGAGGACAGACTACTAAGGCCAGGTTT 1697	1698 TTATATGAGAGAACATGCCACCACAAGATGCAGAAATAGGTTACCGGAATTCATGAGA 1757	/ 1758 CAAACTAAAACTAAACAGTCATGCCCATTTGGAAGAGTCCCAGTTAACCTTCTAAAT 1817
	888888888888	NO K W	6 6	\$ 8 \$	4 8 4	S A	S S	\delta \delta \delta	S A	S A	8 8	8 8	5 A	상 음	à

STTAGAGGCAGTTCACACAATCCATCAA 2897 AGTIGIACCTIGITITATGAAAGACAA 1877 1937 AAATAGTCATTTCAAGGAACCTCTGGTG 1997 TGATTCAATAACCCTGAAGAATAAAAGG 2057 TAAAGAGTATCAAGAACCAGAGGTTCCA 2117 AAAGTCAGAGTGTATTAACCAGAATCCT 2177 AGTITCAAACAGTCACCACCAATAICA 2297 TAAGACACCAAGCAGCAATACCTTGGAT 2357 AAAGAATGACTTTCCACCTGCTTGTCAG 2417 CCAGCAGCAACAGCATCAAATACTTGCC 2477 TICITCAGCAARGAATGAATGCAITICGGIT 2537 2597 TGAAATCACGGACCAGTACATCTACATG 2777 TTGGCTTAAAAAAAAAATCCATTGAT 2837 TTGGCTTAAAAAGAAAAATCCATTGAT 1860 PATAAATATGTGAACTTAGAAGAAGCA 2657 FGGAAGAGTCCCAGTTAACCTTCTAAAT 840 SCCIGGATCTAAACCAAGTGGAAATGAT AGGAAGTGGAGGTTCAAGCAAGGTATTT

셤

ò d

à

ò g 원

ò

d

ò

ò

qq

ò d ò d ò g

ò 셤 ò

ద

```
The present invention relates to novel proteins and their coding sequences (ADC31168-ADC37455), which activate nuclear factor kappa B (NF-kappaB). The proteins and their coding sequences are useful for treating a disease associated with NF-kappaB activation, such as inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases, or ischaemic disorders.
                                                                                                                                                                 (NF-kappaB),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTAGAAATGGAATCCGAGGATTTAAGTGGCAGAGAATTGACAATTGATTCCATAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTAAATGACGATCTTTTAAATTAAGCTGATTGGTCGGTATAGTCAAGCGATTGAAGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACAAGAAGAGTGTGTCAGCATCGACAGTACTAAGTGCCCAAGAGCCGTTCTCCCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rrradaaargdaggcrdaagagrraarrggcagcagrgrgacgarrgarrccarcargag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAGTGAGAGACATTAAAAATAAGTTTAAAAATGAAGACCTTACTGATGAACTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109 CAAAATGAGAGATATTAAAAATAAG---ATAAATGAAGACTGTACTGATGAGCTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATAAAATTTCTGCTGATACTACAGATAACTCGGGAACTGTTAACCAAATTATGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     166 GTCTAAAATCTGTG-----CCGATCACACCGAAACTGTTAACCAAATTATGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCAAACAACCCCAGAGGACTGGTTGAGTTTGTTGCTCAAACTAGAGAAAAACAGTGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             reggaacacccagagaacregrigaarrictrecreaaacragagaaaaacagcreacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTAAGTGATGCTCTTTTAAATAAATTGATTGGTCGTTACAGTCAAGCGATTGAAGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCCCCAGATAAATATGGCCAAAATGAGAGTTTTGCTAGAATTCAAGTGAGATTTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTAAAAGCTATTCAAGAGCCAGATGATGCACGTGACTACTTTCAAATGGCCAGAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTAAAAGCTATTCAAGAGCCTGATGATGCCCGTGACTACTTCCAGATGGCCAGGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCAAGAAATTTGCTTTTGTTCATATCTTTTGCACAATTTGAACTGTCACAAGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCAAGAAGTTTGCTTTTGTGCACGTATCTTTTGCACAGGTTTGAACTGTCTCAAGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTCAAAAAAGTAAACATTCTTCAAAAGCTGTAGAACGTGGAGCAGTACCACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rerrahahahahadengenerrerrengahahadengradadangengengengen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGCTGGAAATTGCCCTGCGGAATTTAAACCTCCAAAAAAAGCAGCTGCTTTCAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCTGGAGACGCCATGCGTAACTTACACCTCCAGAAAAGCAGCTGCTTCCGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAAGAAGATTTATCAGCATCTACGGTATTAACTGCCCAAGAATCATTTTCCGGTTC
                                                                                                                                                                                   useful for treating inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2860;
                                                                                                                                                                 kappa B
                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2860 BP; 914 A; 601 C; 628 G; 716 T; 0 U; 1 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                 factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 9;
                                                                                                                                                                 nuclear
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1633; Dl
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                         Claim 4; SEQ ID NO 1; 938pp; English.
                                                                                                                                                                 activates
04-OCT-2002; 2002US-0415769P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            42.2%;
76.8%;
                                                                                                                                                                 protein that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 76.8
Matches 2192; Conservative
                                                                      ŝ
                                                                      Muramatsu
                                 (ASAH ) ASAHI KASEI
                                                                                                         WPI: 2003-505282/47
                                                                                                                                                                                                                    ischemic disorders
                                                                                                                            P-PSDB; ADC37169.
                                                                                                                                                               purified
                                                                      Matsuda A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  637
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                  2100
                                                  1980
                                                                                       3017
                                                                                                                          2040
                                                                                                                                                                                                                                                                        2160
                                                                                                                                                                                                                                                                                                                                                                                                                       2280
                                                                                                                                                             3077
                                                                                                                                                                                                                                     3137
                                                                                                                                                                                                                                                                                                            3197
                                                                                                                                                                                                                                                                                                                                               2220
                                                                                                                                                                                                                                                                                                                                                                                    3257
                                                                                                                                                                                                                                                                                                                                                                                                                                                            3317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2520
                                              CATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGATAGTTGATGGAATGCTA
                                                                                                           GATICICAGGIIGGCACAGIIAAITIAIAIGCCACCAGAAGCAAICAAAGAIAIGICIICC
                                                                                                                                                                                                                                                                                                                                                                                                               ATTICIAAATTACAIGCCATAATTGATCCTAATCCAGAAATTGAATTCCCGGATATTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAACACTATAGGTGGTGAA
             CATGGCATTGTTCACAGTGATCTTAAACCAGCTAACTTTCTGATAGTTGATGGAATGCTA
                                                                                                                                                           GATICICAGGIIGGCACAGIIAATIAIAIGCCACCAGAAGCAAICAAAGAIAIGICIICC
                                                                                                                                                                                                                                   TCCAGAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCCAAAAGTGATGTTTGGTCCTTA
                                                                                                                                                                                                                                                                       TCCAGAGAGAATGGGAAATCTAAGTCAAAGATAAGCCCCCAAAAGTGATGTTTGGTCCTTA
                                                                                                                                                                                                                                                                                                          ATTICIAAATTACAIGCCATAATIGAICCTAAICAIGAAATIGAATTICCCGATAITCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGAAAGATCTTCAAGATGTGTTAAAGTGTTTTAAAAAGGGACCCAAAAACAGAGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGAAAGATCTTCAAGATGTGTTAAAGTGTTTTAAAAAGGGACCCAAAACAGAGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCATTCCTGAGCTCCTGGCTCATCCATATGTTCAAATTCAAACTCCAGTTAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCATTCCTGAGCTCCTGGCTCATCCCTATGTTCAAATTCAAACTCATCAGTTAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arceccaaccaaccacreaacaaarcaararararrerecccaacrrerecreaar
                                                                                   AAGCTAATTGATTTTGGGATTGCAAACCAAATGCAACCAGATACAACAAGTGTTGTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGCCAAGGGAACCACTGAAGAAATGAAATATGTTCTGGGCCAACTTGTTGGTCTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTCCTAACTCCATTTTGAAAGCTGCTAAAACTTTATATGAACACTATAGTGGTGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nuclear factor kappa B; NF-kappaB; inflammation; autoimmune disease; cancer; infectious disease; bone disease; AIDS; neurodegenerative disease; ischaemic disorder; Antiinflammatory; Immunomodulator; Cytostatic; Antimicrobial; Osteopathic; Anti-HIV; Neuroprotective; Nootropic; Cardiant; Gene therapy; murine; gene; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nuclear factor kappa B (NF-kappaB) activating gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001JP-00368692.
2001US-0335829P.
2002JP-00291302.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; DNA; 2860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO2003048202-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-DEC-2001; 2
05-DEC-2001; 2
03-OCT-2002; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-DEC-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-JUN-2003
                                                                                   2958
                                                                                                                                                         3018
                                                                                                                                                                                                                                                                     2101
                                              1921
                                                                                                                                                                                              2041
                                                                                                                                                                                                                                   3078
                                                                                                                                                                                                                                                                                                                                                                                3198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADC37168
                                                                                                                      1981
                                                                                                                                                                                                                                                                                                          3138
                                                                                                                                                                                                                                                                                                                                             2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                        3258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADC37168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
ADC37168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus
```

1090

165

1150

216

1210

276

1270

1390

1450

456

1510

516

1570

1630 636

969

1	3661ATCAGCAAAAAATTCAGTGAGATTATCTTTAAAAGAAAACTGTAAAAATAGCAACC 3718 2662 AAACAAACAAACAAACTTCAGTGGAGTTATCTCTCAAAAGGAAGCTGTAAAGTTAACC 2718 3719 ACTTATGGCACTGTATATTGTAGACTTGTTTTCT-CTGTTTTATGCTCTTGTGTAATC 3777 2719 ACTTATGGCACTGTATATATATATAGAGTTTTTCT-CTGTTTTTATGCTCTTGTGTAATC 3777 2719 ACTTATGGCACTGTATATAAATTATAGAGTTGTTTTTTTT
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	장 음 장 음 장
	GGTATTTCAGGTGTTAAATGAAAGAAACAGATAATGCTATAAAATATGTGAACTTAGA GGTATTTCAGGTGTTAAATGAAAGAAACAGATATAGTAAAAATATGTGAACTTAGA GGTGTTTCAGGTATTGAAAAAAAAAA

308

Thu Sep 30 10:17:11 2004

엄

```
31441 rececreaagrearedececececeresecreesaagrerrasarracagearaagee 31382
31914 CGAACTCGGCTTACTGCAACCTCTGCCTCCTGAGTTCAAGCGATTTTCCTGCCTCAGCCT 31855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31621 Tecadrecadrecadarcresscreadecreadecrecacerecressreadradr 31562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31561 crecrectreasecreceastraecressiraeascarecereacecereses
                                                                                       31800
                                                                                                                                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              545 TGGACTCAAGGGATCCGCCTGCCTTCCCAAAGTCCCGAGATTACAGGTGTGAGTC 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New recombinant nucleic acid, useful for treating carcinomas, lymphomas,
                                                                                          31854 CCCGAGTAGCTGGGATTACAGGCACCTGCCACCACGCCTGGCTAA-----TTTTTGTATT
                                                                                                                                                                                                                                                                    309 TGATTCTTTTTTTTGTTGGATTTTTGAAACAGGGT----CTCCCTTGGTCGCCCAGGC
                                             TGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTGTGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                        365 TGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTGCCAGGCTGCAGGGTTTCACAGGCTGTTGGCCAGGCTGTTCTCAAACTCC
                                                                                                                                       TTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTGACCTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCCCACTITAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACCACCCGGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human; ds; cytostatic; gene therapy; vaccine; carcinoma; lymphomas;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer; neoplasm; adenocarcinoma; sarcoma; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .632/c
ADB72632 standard; DNA; 32404 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31381 ÁCCGPGCCCGGCCT 31368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-MAR-2001, 2001US-00798586.
23-CCT-2001, 2001US-00004113.
08-NOV-2001, 2001US-0005482.
20-NOV-2001, 2001US-00997722.
20-DEC-2001, 2001US-00034650.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-DEC-2001; 2001WO-US051291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           605 ACCATGCCTGACCT 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Morris DW, Engelhard EK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SAGR-) SAGRES DISCOVERY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2003-239337/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human BLR1 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2003008583-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-JAN-2003.
                                                                                                                                                                                                                                    249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          425
                                                                                                                                         189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    485
                                               129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADB72632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADB72632,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                       à
                                                                                                                                                                                 d
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to recombinant carcinoma associated (CA) nucleic acid sequences from mouse and human (ADA01482-ADA03094), and to recombinant carcinoma associated proteins (CAP) encoded by them. The invention also encompasses expression vectors and host cells comprising a CA nucleic acid, a polypeptide (especially an antibody) that specifically binds to the protein, and a biochip comprising CA nucleic acid or fragments thereof. The sequences of the invention were identified using oncogenic retroviruses, which insert into the genome of the host organism at random. Many of these do not carry transduced host oncogenes or pathogenic trans-acting viral genes, meaning that cancer incidence is a direct consequence of the effects of proviral integration into host protonocogenes. The CA nucleic acid sequences can be used to diagnose carcinoma despecially breast cancer, prostate cancer, Jumphoma or leukaemia) or a propensity to carcinoma by determination of the sequence of a CA gene, or by determination of CA gene expression in particular tissues. CA nucleic acids, proteins and antibodies are also useful as therapeutic agents and in screening and evaluating drug candidates. The present sequence of the invention. Note: The complete sequence data for this sequence of the invention. Where The complete sequence data for this sequence of the invention. Where The complete sequence data for this sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31974 TATTTATTTTTTTGAATCGGAGTTTCACTCTTGTTGCCCAGGCTGGAGTGCAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68
                                                                                                                                                                                                                                                                                                       Human, carcinoma associated, oncogene, carcinoma, cancer, breast, prostate, lymphoma, leukaemia, cytostatic, gene therapy, drug screening,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            patent did not form part of the printed specification, but was obtained
in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTGCAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New recombinant nucleic acid encoding carcinoma associated protein, useful for preparing compositions for treating carcinomas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 32404 BP; 7711 A; 8273 C; 9097 G; 7303 T; 0 U; 20 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 8; Length 32404;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                             Human BLR1 carcinoma associated gene, SEQ ID NO:1412.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 4e-83;
2779 AATCTGCTAATGTTTTACGTTTAGAACAGTGAATG 2813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 395.6; Di
Pred. No. 4e-83,
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 1412; 245pp; English.
                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                   ADA02894 standard; DNA; 32404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-DEC-2002; 2002WO-US041414;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 81.3%;
Matches 499; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-DEC-2001; 2001US-00035832
                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SAGR-) SAGRES DISCOVERY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2003-587068/55.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO2003057146-A2.
                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                             06-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Morris DW;
                                                                                                                                                                                                                                                                                                                                                         gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     σ
                                                                                                                                                                ADA02894;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69
                                                                   RESULT 13
                                                                                            ADA02894
```

g

ò

δ

ď.

carcinoma-associated gene;

```
WO2003045230-A2
Cytostatic;
secreted; tr
                                                                                        05-JUN-2003
                                                                                                                                                                                                 Morris DW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     309
                                       ds snw
임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                   31855
                                                                                                                                                                                                                                                           TATITATITATITITIGAATCGGAGTITCACTCTIGITIOCCCAGGCTGGAGTGCAATGGCA 31915
                                                                                                                                                                                                                                                                                                                                                                                                                           31740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATACACCTGCCTCAGCCCCCCAAAGTGCTGGGATTACAGGCGTGAGCC--ACCCGGCC 31682
                                                                                                                                                                                                                                                                                                                                                                        31854 CCCGAGTAGCTGGGATTACAGGCACCTGCCACGCCTGGCTAA-----TTTTTGTATT 31800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31621 TGGAGTGCAGTGGCACAATCTCGGCTCACTGCAACCTCCACCTCCTGGGTTCAAGTAATT 31562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCTGCTTCAGCCTCCCAAGTAGCTGGGATTACAGGCATGCGTCACCACGCCTGGCTAA 31502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tririgiaririragiadadargaariricaccarrargaccagcragicrigaacrcc 31442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31441 TGCCCTCAAGTGATCCGCCCGCCTCGGCCTCCCAAAGTGTTAGGATTACAGGCATAAGGC 31382
                                                                                                                                                                                                                                                                                                                                                                                                 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                    249 TGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTGTGCCTGGC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      604
                                                                                                                                                                                                                                                                                           CAATCTCAGCTTACTGCAACCTCCGGCCTCCCGGGTTCAAGCGATTCTCCTGCCTCAGCCT 128
                                                                                                                                                                                                                                                                                                                                               TGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGTGATC 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              484
                                               The invention relates to a novel recombinant nucleic acid comprising a nucleotide sequence selected from any of the 660 sequences fully defined in the specification. A polynucleotide of the invention has cytostatic activity, and may have a use in gene therapy, or in a vaccine. The recombinant nucleic acids and polypeptides are useful for treating carcinomas, e.g. lymphomas, cancers, neoplasm, adenocarcinoma, and sarcomas. The present sequence represents a human gene of the invention.
                                                                                                                                                                                                                                        68
                                                                                                                                                                                                                                                                                                                   ceaacticeéctitactecaaccicitectecientaaetreaaeceatititectecereaecer
                                                                                                                                                                                                                                                                                                                                                                                                 TTTAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTGACCTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                        TTTAGCAGAGGTGGAGTTTTAGCATGTTGGCCAGACCGGTCCTGAACTCCTGACCTCAGG
                                                                                                                                                                                                                                       9 TITITITITITITITIGAGAIGGAGTITICACTCTIGITIGGCCAGGCIGGAGTGCAAIGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTTGCCAGGCTGCAGGGTTTCACAGGCTGTGGCCAGGCTGTTCTCAAACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PITTGITGITGGATTTTTGAAACAGGGT----CTCCCTTGGTCGCCCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCGGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGACTCAAGGGATCCGCCTGCCTCCACTTCCCAAAGTCCCGAGATTACAGGTGTGAGTTC
                                                                                                                                                                                                              Gaps
                                                                                                                                                          Sequence 32404 BP; 7711 A; 8273 C; 9097 G; 7303 T; 0 U; 20 Other;
                                                                                                                                                                                                              11;
                                                                                                                                                                                  Score 395.6; DB 9; Length Pred. No. 4e-83; O; Mismatches 104; Indels
adenocarcinoma, or sarcomas.
                         SEQ ID NO 460; 2304pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
ADC85373/c
ID ADC85373 standard; DNA; 32404 BP.
XX
AC ADC85373;
XX
DT 01-JAN-2004 (first entry)
XX
XX
DE Mouse Blr1 coding sequence.
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acceraceacer 31368
                                                                                                                                                                                   Query Match
Best Local Similarity 81.3%;
Matches 499; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCATGCCTGACCT
 neoplasm,
                                                                                                                                                                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                                                                                                                                                                           31799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            365
                         Claim 1;
                                                                                                                                                                                                                                                                                           ტ
                                                                                                                                                                                                                                                                                                                    31914
                                                                                                                                                                                                                                                                                                                                             129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          605
  cancers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PP
Pb
                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                    Ωp
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
```

BP.

```
31915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              regaerecaeredearcresecreacresearcresecresecresegricaagraarr 31562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of any of
drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a recombinant nucleic acid comprising a nuclectide sequence selected from any of the fully defined carcinoma-associated (CA) genes from the 50 tables given in the specification. The CA proteins are secreted, transmembrane or intracellular proteins. The recombinant nucleic acids are useful for screening for drug candidates for diagnosing or treating carcinomas. Sequences given in ADCB5215-ADCB5514 represent CA genes of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITITGIATITITATIAGAGACAGGGTTICACCATGITGGCCAGGCTGTTCTCAAACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31974 TATTTATTTATTTTGAATCGGAGTTTCACTCTTGTTGCCCAGGCTGGAGTGCAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31854 CCCGAGTAGCTGGGATTACAGGCACCTGCCACCACGCCTGGCTAA----TTTTTGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31799 TTTAGCAGAGGTGGAGTTTTTAGCATGTTGGCCAGACCGGGTCCTGAACTCCTGACCTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31681 rearrementariani remerende de la reconstruction de la reconstructi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31561 Crecrecricadecreceaagraderegaarracadecardecreaceaeceregeraa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATCTCAGCTTACTGCAACCTCCGCCTCCCGGGTTCAAGCGATTCTCCTGCCTCAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITAGTAGAGATGGGGTTTCACCATGTTGGTCAGGCTGGTCTTGAACTCCTGACCTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATCCACTTGCCTTGGCCTCCCAAAGTGCTAGGATTACAGCCGTGAAACTGTGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rdaracaccrecercadecececeaadrecaddariacadecerdadeee-acedeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATTCTTTTTTTGTTGTTGGATTTTTGAAACAGGGT----CTCCCTTGGTCGCCCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAGTGCAGTGCGATCTTGGCTCACTATAACCTCCACCTCCTGGTTTCAAGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCCACTTTAGCCTCCTGAGTAGCTGTGATTACAGGCGTGCACCACCACACCGGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTTTTTTTTTTTTGAGATGGAGTTTCACTCTTGTTGGCCAGGCTGGAGTGCAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Seguence 32404 BP; 7711 A; 8273 C; 9097 G; 7303 T; 0 U; 20 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 32404;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New recombinant nucleic acid comprising a nucleotide sequence the carcinoma-associated (CA) genes, useful for screening for candidates for diagnosing or treating carcinomas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 395.6; DB 9; Length Pred. No. 4e-83; 0; Mismatches 104; Indels
; gene therapy; vaccine; cancer; transmembrane; intracellular; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID NO 159; 983pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-DEC-2002; 2002WO-US038582.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-NOV-2001; 2001US-00997722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 81.3%;
Matches 499; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Engelhard EK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SAGR-) SAGRES DISCOVERY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2003-513603/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \stackrel{>}{\circ}
```

```
us-10-081-119-13.rng
```

```
31501 TITITGTATTTTTAGTAGAGGATGGAGTTTCACCATTATGGCCAGGCTGGTCTTGAACTCC 31442
                                                                                                                                   Search completed: September 30, 2004, 02:36:07 _ Job time : 1334 secs
                                                                       605 ACCATGCCTGACCT 618 | | | | | | | | | | 31381 ACCGTGCCCGGCCT 31368
 g
                        ð
                                              g
                                                                     ò
                                                                                             qq
```

```
GenCore version 5.1.6

Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: September 29, 2004, 16:02:29; Search time 134 Seconds (without alignments)

Title: US-10-081-119-14

Perfect score: 4376
Sequence: 1 NMKVRDIKNKFKNEDLTDEL.......GGESHNSSSKTFEKKRGKK 841

Scoring table: BLOSUM62

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107
```

l: geneseq_29Jan04:*

l: geneseqp1980s:*

l: geneseqp1090s:*

l: geneseqp2000s:*

l: geneseqp2003s:*

l: geneseqp2003s:*

l: geneseqp2003s:*

l: geneseqp2004s:*

l: geneseqp2004s:*

l: geneseqp2004s:*

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

Minimum DB seg length: 0 Maximum DB seg length: 2000000000 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Abp54938 Human tyr	611 Human	Human	0437 Human	9		Abu56724 Lung canc	0410	171 Nuclear	1169	48 Schize	521		207	202			Aspe	Saccha	Yeast	127	573	720	Aag05721 Arabidops	722	
SUMMARIES		ABP54938	ABU61611	ADD49934	ADE40437	ADE31645	ADE38369	ABU56724	ADB80470	ADC37171	ADC37169	ABP54948	ABU61621	AAG38500	AAG38501	AAG38502	ABB63414	ABJ25382	ABJ25982	ABP54947	ABU61620	AAW26727	ABP73673	AAG05720	AAG05721	AAG05722	
	h DB	-	41 7		1 7					7 7	7 0	8 5				38											
	Length	84	84	84	841	84	857	85	85	85	83	67	67	77	72	63	63	73	8	76	76	76	59	33	52	28	
•		100.0	0	00	100.0	100.0	00		99.9	•	72.7	15.4		14.8	14.7	4	4.	13.8	•		13.4	13.4	12.8	•		•	
	Score	4376	4376	m	സ	4376	4376	4373	4373	4373	3182.5	73	673.5	47		640.5	w	603	603	86	586.5	8	u i	523.5	4	472	
	Result No.		8	٣	4	Ŋ	ω	7	α	m	10	11	12		14	15	16	17	18	19	20	21	22	23	2.5	25	

				Adc37185 Nuclear f	Aam39278 Human pol	Aabl0946 L. mexica		Nucle	Human		Ade38387 Human pro	Abg26847 Novel hum			Aab65659 Novel pro	Aag67541 Consensus	Aar76062 Protein k	Aab27933 Human sec	Aab27995 Human sec	
ADC37183	AAM41064	ABU07446	ABP73734	ADC37185	AAM39278	AAB10946	ABB78798	ADC37181	ABU11737	ABU65050	ADE38387	ABG26847	AAR76061	ABB64044	AAB65659	AAG67541	AAR76062	AAB27933	AAB27995	
7	4	9	Ŋ	۲	4	m	Ŋ	7	ø	w	۲	4	N	4	4	4	(7	m	m	
749	803	719	528	717	718	1090	250	598	808	749	787	748	787	520	588	231	540	431	541	
7.8	7.8	7.8	7.7	7.7	7.7	7.7	7.6	7.6	7.6	7.5	7.5	7.5	7.4	7.4	7.4	7.3	7.3	7.3	7.3	
342.5	342.5	340	338	(1)	~	336	332.5	332	332	329.5	328.5	326.5	325.5	324	323.5	319	319		318.5	
26	27	28	5 6 7	0.0		100	1 M	3.4	35	36	37	. ee	0 0	0 4	41	4 2	43	4.	4.	

ALIGNMENTS

ABP54938	
Qi X	ABP54938 standard; protein; 841 AA.
PG.	ABP54938;
×	
DŢ	13-JAN-2003 (first entry)
×	
DE	Human tyrosine threonine kinase.
X	
Ž	inase, TTK; protein Kinase, e
Š	mitotic checkpoint; colon cancer; breast cancer; tumour; cytostatic;
ž	gene therapy.
×	
SO	Homo sapiens.
×	
PN	WO200268444-A1.
×	
PD	06-SEP-2002.
×	
다 দ	21-FEB-2002; 2002WO-US005278.
×	
PR.	21-FEB-2001; 2001US-0271254P:
Ş	
PA	(CHIR) CHIRON CORP.
4 1	The state of the following of the state of t
7 }	
\$	
ස 	WPI; 2002-698650/75.
띥	N-PSDB; ABV73974.
×	
Гď	Reducing growth of cancer cells comprises reducing Tyrosine Inrechine.
Бď	TTK) activity, useful in diagnosing and treating disor
E G	abnormal expression levels and activity of TTK, such as lung, colon,
Ęď	prostate and ovarian cancer.
X	
PS	Claim 7; Page 71-73; 113pp; English.
X	٠
ပ္ပ	equence is the protein sequence of human tyrosine this
ပ္ပ	is involved
ပ္ပ	is base
ပ္ပ	
ပ္ပ	relative to healthy tumour colon cells as detected by microarray
ខ្ល	1 lines derived
ပ္ပ	from various forms of cancer, indicating involved of TTK in cancer as a
S	
) נ	יותות
ָ כל	
ر	cancer cera times, times

metastatic breast cancer cell line (MDA-MB-213) and a colorectal carcinoma cell line (98620). These findings serve as the basis for the materials and methods of the invention for use in diagnossing cancer of a patient, for planning and selection of appropriate therapeutic and/or prophylactic treatment, and for treatment of cancer associated with aberrant TTK levels, eg. associated with overexpression or or overproduction of TTK, by inhibition of gene product production or decreasing levels of transcription and/or translation), by decreasing TTK activity by decreasing TTK gene product production, and/or by reducing one or more of TTK's kinase activities in cancer cells, especially breast cancer or colon cancer cells. The present invention has the advantage of having the ability to project disease progression based on expression of TTK in a malignant or pre-malignant growth. It allows a more systematic 61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120 61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 180 9 9 MNXVRDIKNKFKNEDLIDELSLNKISADTIDNSGTVNQINMWANNPEDWLSILLKLEKNS 1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS Gaps ö Length 841; Indels 100.0%; Score 4376; DB 5; 100.0%; Pred. No. 2.1e-292; . 0 Mismatches 0; Matches 841; Conservative Similarity Sequence 841 AA; Query Match 121 121 Local 8888888888888888888 ò g ò qq 8 셤

420 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 180 240 EEEKKALSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240 300 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360 360 420 480 480 540 540 600 600 099 099 720 720 IINQISKLHAIIDPNHEIBFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780 **EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR** NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE PEVPESNOKOWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTIFEQPVFSVSKQS PPISTSKWFDPKSICKTPSSNTLDDYMSCPRTPVVKNDFPPACQLSTPYGQPACFQQQH PEVPESNOKOWOAKRKSECINONPAASSNHWQIPELARKVNTEOKHTTFEQPVFSVSKQS QILATPLONLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN QILATPLONLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN LEBADNQTLDSYRNETAYLNKLQQHSDKIIRLYDYEITDQYIYWWECGNIDLNSWLKKK KSIDPWERKSYWKNWLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT SVVKDSQVGTVNYMPPBAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ SVVKDSQVGTVNYMPPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQ PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT 181 181 241 241 301 361 481 301 361 421 421 481 541 601 601 661 661

ABU61611 standard; protein; 841 AA. ABU6161

RESULT 2

g

ò

ABU61611;

(first entry) 11-AUG-2003

TIK. Human Tyrosine threonine kinase, tyrosine threonine kinase, TTK; cancer; cytostatic; mitotic checkpoint gene. Human; enzyme;

Homo sapiens.

US2003045491-A1.

06-MAR-2003.

21-FEB-2002; 2002US-00081119.

23-FEB-2001; 2001US-0289813P.

'n.) JEFFERSON A B CHAN V W. (REIN/)

> 8 g

d ò

ò g 8 6 \$ g

6 P 9 9

ر م

ò g ò

(CHAN/)

Jefferson AB, Reinhard C,

Chan VW;

WPI; 2003-456566/43. N-PSDB; ACA62263. Detecting cancer in a subject, by comparing expression levels of tyrosine threonine kinase polypeptide or polymucleotide in a subject cell and a normal cell, where an increase in the expression level in the test cell is indicative of cancer.

Claim 7; Page 25-27; 79pp; English.

a subject, comprising comparing the expression levels of tyrosine threonine kinase (TTK, a mitotic checkpoint gene) polypeptide or chreonine kinase (TTK, a mitotic checkpoint gene) polypeptide or compared to the subject and in a normal con-cancer cell, where an increase in the expression level of TTK protein can cancer cell, where an increase in the expression level of TTK protein cancer cell, cancer other than ovarian cancer. Also included car erducing growth of a cancerous cell (by contacting a cancerous cell with an amount of an agent effective to reduce TTK polypeptide activity of in the presence of a candidate agent that reduces growth of a cancerous cell (comprising: (i) detecting the activity of a TTK polypeptide in the presence of a candidate agent changed to TTK polypeptide activity (i) detecting the candidate agent changed activity (comparing relative to TTK polypeptide activity (comprising: (i) contacting a cancerous cell displaying elevated expression of a TTK-contacting a cancerous cell displaying elevated expression of a TTK-contacting a cancerous cell displaying elevated expression of a TTK-contacting a cancerous cell displaying elevated expression of a TTK-contacting a cancerous cell displaying elevated expression of a TTK-contacting a cancerous cell displaying elevated expression of a TTK-contacting a cancerous cell displaying elevated exprising cancer in a prognosis of a cancerous cell expression candidate agent, than ovarian cancer in a cancer of a cancer of a candidate agent on TTK polypeptide activity cancer in a cancer of the candidate agent on TTK polypeptide activity) and assessing the prognosis of a cancer of a cancer of a cancer of a cancer of the candidate agent on TTK polypeptide activity) and assessing the prognosis of a cancer of the candidate agent than ovarian cancer in a cancer of the cancer of cell The invention relates to detecting cancer (other than ovarian cancer) in subject (comprising: (1) detecting expression of TTK -encoding polynucleotide in a test cancer cell of a subject; and (ii) comparing a level of expression of TTK-encoding polynucleotide in the test cancer cell with a level of expression of the polynucleotide in a control noncancer cell, where the level of expression of TTK in the test cancer relative to the level of expression in the control non-cancer cell is

us-10-081-119-14.rag

841

×

841

Ą

standard; protein; 841

RESULT 3 ADD49934 ID ADD4

ADD49934; ADD49934

```
ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    999
                                            TTK
                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                               09
                                                                                                                                                                                                                                         9
indicative of the prognosis of the cancerous disease). The methods are useful for detecting cancer (other than ovarian cancer) in a subject, reducing growth of cancerous cells, identifying an agent that reduces growth of a cancerous cell, identifying an agent that reduces Tractivity and assessing the prognosis of a cancerous disease other than ovarian cancer. The methods are also useful for determining the ability of a subject to respond to a particular therapy e.g. as a basis of rational therapy. The present sequence represents human TTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KSIDFWERKSYWKWMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PVNOMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQ
                                                                                                                                                                                                              1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                MIKVRDIKNKFKNEDLTDELSINKISADTTDNSGTVNQIMMANNPEDWLSLLIKLEKNS
                                                                                                                                                                                                                                                                                                                                                      ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                   NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVXNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KSIDPWERKSYWKNMLBAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                       VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                  VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                    EEEKKOLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                                                            ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVFLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                    Gaps
                                                                                                                                                                                   ;
0
                                                                                                                                                         Length 841;
                                                                                                                                                                                    Indels
                                                                                                                                                        100.0%; Score 4376; DB 7; 100.0%; Pred. No. 2.1e-292;
                                                                                                                                                                                       ..
0
                                                                                                                                                                                    0; Mismatches
                                                                                                                                                        Query Match
Best Local Similarity 100.
Matches 841; Conservative
                                                                                                                               Sequence 841 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
       88888888888888
                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                               \ddot{\circ}
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                               ð
```

```
The invention relates to an isolated polymuclectide (a) comprising any of the 666 fully defined nuclectide sequences appearing as ADD49269 - CC the 666 fully defined nuclectide sequences appearing as ADD49269 - CC the 666 fully defined nuclectide sequences that hybridise to (a) least 20 contiguous residues of (a); sequences having at least 75 or 90% identity to (a); or degenerate variants of (a). Also included are an isolated polymeptide ((b) (comprising: sequences having at least 75 or 90% identity to the sequence having at least 70 or 90% identity to the confituois any of the 4 amino acid sequences encoded by the new colling and or the 4 amino acid sequences in (a) or (b)), an expression vector comprising the above polymeloctide operably linked to an expression control sequence, a host cell transformed or transfected with the above expression vector, and collinary or sequences and the above expression control sequence, a body protein comprising at least to one polypeptide that hybridises to the binds to the above polypeptide, an oligonuclactide that hybridises to the parent or comprising; obtaining a biological approxement comprising at least (comprising: obtaining a biological sample that binds to the polypeptide, an oligonuclactide that hybridises to the presence of a cancer in a patient (comprising: obtaining a biological approxement or comprising at least or with the oligonucleotide that hybridises to the oligonucleotide; and comparing the presence of a cancer in a mount of the polypeptide, to a predetermined above; detecting in the sample amount of the polypeptide, to a predetermined cut-off value and then determining the presence of a cancer of a cancer or a predetermined cut-off value and comparing the presence of a cancer or comprising contacting recells by pedicies. The binding agent or contitions and for a time sufficient to permit the component selected from physiological carriers and comparising recells prepared by the method for a time selected from physiological carriers and a component selected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated polypeptides and polynucleotides useful for diagnosing, preventing and treating cancer, particularly lung cancer.
                                                                                                                                     Human; lung cancer antigen; cytostatic; lung cancer; gene therapy;
                                                                                                   L 1479p.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 3; SEQ ID NO 666; 250pp; English
                                                                                                   Human lung specific tumour antigen
                                                                                                                                                                                                                                                                                                                                                                          05-APR-2001; 2001US-0282289P. 05-OCT-2001; 2001US-0327511P.
                                                                                                                                                                                                                                                                                                                                  04-APR-2002; 2002US-00116712
                                                           (first entry
                                                                                                                                                                      T-cell; tumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Switzer A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-844452/78.
N-PSDB; ADD49931.
                                                                                                                                                                                                                                                                                                                                                                                                                                          (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                    US2003194764-A1.
                                                                                                                                                                                                            Homo sapiens.
                                                           15-JAN-2004
                                                                                                                                                                                                                                                                                          16-OCT-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bangur CS,
                                                                                                                                                                      vaccine;
```

```
120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
stimulating an immune response in a patient (comprising administering to the patient the above composition) treating lung cancer in a patient (comprising administering to the patient the above composition and a diagnostic kit (comprising; at least one oligonucleotide cited above; or at least one antibody cited above and a detection reagent comprises a reporter group). The composition and methods are useful in diagnosing, preventing and treating cancer, associated antigen of the invention.
                                                                                                                                                                                                                                                                                                                                       VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                       ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS 180
                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                  EEEKKNISASTVLTAQESPSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEEKKULSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                      MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMAANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                           VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                              ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELITIDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTFFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SVVKDSQVGTVNYMPPEAIKDMSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEVPESNOKOWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OILATPLONLOVLASSSANECISVKGRIYSILKOIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KSIDPWERKSYWKNWLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                      ô
                                                                                                                                                                                         Length 841;
                                                                                                                                                                                                                      Indels
                                                                                                                                                                                      100.0%; Score 4376; DB 7; 100.0%; Pred. No. 2.1e-292;
                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                     Similarity
                                                                                                                                                       Sequence 841 AA;
                                                                                                                                                                                                                   841;
                                                                                                                                                                                                                                                                              н
                                                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                    Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                  Matches
 8888888888888888
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                        상염
                                                                                                                                                                                                                                                                                                                                                            ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음
상
음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
AIDS; acquired immunodeficiency syndrome; human immunodeficiency virus; HIV-related disorder; differential expression; drug screening; viral replication modulation; diagnosis; prognosis; predisposition; anti-HIV; gene therapy; antisense therapy; human; TIX protein kinase;
                                                                                          Human TTK protein kinase (gene ID 1682) protein.
                                              ADE40437 standard; protein; 841 AA
                                                                                                                                                                                                                                        2002US-0406297P.
2002US-0412007P.
2002US-0417508P.
2002US-0432318P.
                                                                                                                                                                                                     2003WO-US004246.
                                                                                                                                                                                                                    2002US-0357391P.
                                                                                                                                                                                                                           2002US-0380249P.
2002US-0391306P.
                                                                                                                                                                                                                                                                               (MILL-) MILLENNIUM PHARM INC
                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                           polypeptide activity.
                                                                                                                                                                                                                                                                                               Weich NS;
                                                                                                                                                                                                                                                                                                             WPI; 2003-671808/63.
                                                                                                                                                                                                                                                                                                                      N-PSDB; ADE40436.
                                                                                                                                                                      WO2003070883-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 841 AA;
–
K 841
                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                         27-AUG-2002;
19-SEP-2002;
10-OCT-2002;
                                                                                                                                                                                                    13-FEB-2003;
                                                                                                                                                                                                                    15-FEB-2002;
                                                                                                                                                                                                                                  25-JUN-2002;
                                                                                                                                                                                                                                                                10-DEC-2002;
                                                                            29-JAN-2004
                                                                                                                                                                                     28-AUG-2003
                                                                                                                                                                                                                                                                                                                                    [dentifying
                                                                                                                                                                                                                                                                                               Powell DM,
         841
                             K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841
```

The invention relates to a method of identifying a compound useful in the treatment of AIDS (acquired immunodeficiency syndrome) or an HIV (human immunodeficiency vivus)-related disorder. The invention involves assaying the ability of a test compound to modulate the activity or expression of 26 human proteins. These proteins and nucleic acids encoding them (ADE40422-ADE40473) are differentially expressed in tissues relating to ADE50422-ADE40473) are differentially expressed in tissues relating to ADE50422-ADE40473) are differentially expressed in tissues relating to ADE50 or an HIV-related disorder compared to their expression in normal tissues. The invention further discloses methods for the diagnostic evaluation in a cell and to treat a patient with AIDS or an HIV-related disorder. The invention further discloses methods for the diagnostic evaluation and prognosts of various HIV-related disorders, and for the identification of individuals exhibiting a using the method of the invention may be small organic molecules. The methods of the invention may be small organic molecules. The methods of the invention may be small organic molecules. The methods of the invention may be small organic molecules. The methods of the invention may be small organic molecules. Identifying a compound capable of diagnosing, preventing or treating AIDS or an HIV-related disorder comprises assaying the ability of the compound to modulate e.g. 1414, 1481 or 1553 nucleic acid expression or the invention are useful in diagnosing, preventing or treating AIDS or HIV-related disorders. The present sequence represents a human protein which is differentially expressed in AIDS or HIV-related disorders. Claim 1; SEQ ID NO 16; 167pp; English.

Query Match Best Local Similarity

Length 841; Score 4376; DB 7; Pred. No. 2.1e-292; 100.0%;

```
600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                 120
                                                                                                                         180
                                                                                                                                                  180
                                                                                                                                                                            240
                                                                                                                                                                                                    240
                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVNOMAKGTTBEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SVVKDSQVGTVNYMPPPBAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VPLSDALINKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                        ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVFLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                             NSLRQTINKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                               SCNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                             PEVPESNÇKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                               PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                    QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYWVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KSIDPWERKSYWKWMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IINQISKLHAJIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                           MINCYRDIKNKEYNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                         VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                         121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                   EEEKKONLSASTVLTAQESFSGSLGHLONRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                              NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                 PEVPESNOKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                        MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                             EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                   PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
Gaps
..
0
Indels
.
0
Mismatches
.
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -14
                                                                                                                                                                                                                                                        241
                                                                          61
                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                   121
                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                     481
 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
ADE31645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                 Ωp
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                 d
                                                                                                                         8
                                                                                                                                                 g
                                                                                                                                                                             ò
                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                         à
```

```
The invention relates to a method for identifying a compound capable of treating a cardiovascular disorder. The present invention identifies the differential expression of 1682, 6139, 6133, 7771, 14395, 29002, 33226, 47226, 69292, 21656, 32427, 2402, 7747, 1720, 9151, 60491, 1371, 7077, 3207, 1419, 18036, 16102, 7445, 58948, 1870, 25856, 32394, 3484, 2852, 2852, 2155, 60292, 21656, 32450, 14245, 88948, 1870, 25856, 32394, 3484, 2852, 2852, 2813, 2915, 16282, 8868, 43848, 32155, 12208, 2914, 51130, 19489, 21833, 2917, 59590, 15992, 2094, 2252, 3474, 9792, 15400, 1452 or 6585 genes in cardiovascular disease states. The methods are useful in cardiovascular diseases states. The methods are useful in cardiovascular disorders, and as a cherosclerosis, cardiac hypertrophy, ischemia, reperfusion injury, arterial inflammation, vascular wall remodeling, coronary artery ligation, vascular heart disease, valvular mirroembolism, tachycardia, bradycardia, pressure overload, aortic bending, coronary artery ligation, vascular heart disease, valvular disease, including but not limited to, valvular degeneration caused by cardiomyopathy, myocardial fibrillation, artial flutter, pericardial disease, including but not limited to, pericardial flutter, pericardial disease, including but not limited to, pericardial effusion and pericardial cardiomyopathy, myocardial infarcardial effusion and pericardial cardiomyopathy, myocardial infarcardial effusion and pericardial cardiomyopathy, myocardial disease, arrhythmia, sudden cardiac death and cardiomyopathy, myocardial disease, arrhythmia, sudden cardiac death and cardiomyopathy, myocardial disease, arrhythmia, sudden cardiac death and cardiomyopathy and compounds that modulate cardiovascular disease, arrhythmia, sudden cardiac death and cardiomyopathy and compounds that modulate cardiovascular disease, arrhythmia, sudden cardiac be used for identifying compounds that modulate cardiovascular diseases and proteins that may be regulated by a compound of the invention.
Anciarteriosclerotic; cardiant; vasotropic; antiinflammatory; thrombolytic; antiarhythmic; antianginal; hypotensive; gene therapy; cardiovascular; disorder; ischaemia; aortic bending; vascular heart disease; endocarditis; atrial fibrillation; heart failure; angina; cardiomyopathy; cardiac death.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Identifying a compound capable of treating a cardiovascular disorder (e.g., atherosclerosis) comprises assaying the ability of the compound modulate the expression or activity of e.g. 1682, 6169 or 6193 polypeptide or nucleic acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Donaghue M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Acton SL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Logan TJ, Chun M, Galvin KM, Healy A,
Stagliano N, Perodin J, Rodrigue-Way A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; SEQ ID NO 2; 328pp; English.
                                                                                                                                                                                                                                                                                                                                    01-FEB-2002; 2002US-0353224P.
15-MAR-2002; 2002US-0364529P.
19-APR-2002; 2002US-037861P.
29-APR-2002; 2002US-037861P.
12-JUN-2002; 2002US-0376287P.
12-JUN-2002; 2002US-03990971P.
03-JUL-2002; 2002US-0394797P.
10-JUL-2002; 2002US-0394797P.
23-AUG-2002; 2002US-0499097P.
04-SEP-2002; 2002US-0469070P.
05-DEC-2002; 2002US-04618070P.
05-DEC-2002; 2002US-0441300P.
05-DEC-2002; 2002US-0431042P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                              29-JAN-2003; 2003WO-US002571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2003-731468/69.
N-PSDB; ADE31644.
                                                                                                                                                                                                     WO2003065984-A2.
                                                                                                                                                          Homo sapiens
```

Sequence 841

Ā

ď Н

#SEO

Human 1682 protein

29-JAN-2004

XEXEXEX

ADE31645

ADE31645 standard; protein; 841

protein 1682 amino acid sequence

Human

```
ö
                                                                                                   120
                                                                                                                            120
                                                                                                                                                    180
                                                                                                                                                                             180
                                                                                                                                                                                                   240
                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                     PEVPESNOKOWQAKRKSECINONPAASSNHWQIPELARKVNTEOKHTTFEOPVFSVSKQS 420
                                                                                                                                                                                                                                                                                                                                                                      PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS 420
                                                                                                                                                                                                                                                                                                                                                                                                     PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVMSLGCILYYMTYGKTPFQQ 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                    60
                                                                           9
                                                                                                                ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                   NSLRQTNKTKQSCPFGRVPVNLLINSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                   SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                  VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                  ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                  EEEKKWLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                           BEEKKNISASTVITAĢESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                   NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                    SGNDSCELRNIKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                             PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQOH
                                                                                                                                                                                                                                                                                                                                                                                                                                                    QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IINQISKLHAIIDPNHBIBFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTPEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                          Gaps
                           ·,
  Length 841;
                           Indels
Score 4376; DB 7;
Pred. No. 2.1e-292;
                          Mismatches
                          0;
  100.0%;
100.0%;
                          Conservative
             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                         841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ¥
Query Match
Best Local S:
Matches 841
                                                                                                   61
                                                                                                                                                                          121
                                                                                                                           61
                                                                                                                                                 121
                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                        g
                                                                                                 à
                                                                                                                     g
                                                                                                                                                ò
                                                                                                                                                                     Db
                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                    6 B
                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                     Ωp
                                                                                                                                                                                                                                                                                                                                                                                           장염
                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 g 8
                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
```

```
This invention relates to a novel method of treating a human subject having a tumourigent disorder or angiogenic disorder, caused by aberrant gene expression or activity of an isolated protein, by administering a modulator. The modulator may have cytostatic, antithyroid, antidiabetic or ophthalmological activity. The method is useful for treating a subject having a tumourigenic or angiogenic disorder, in particular for treating cancer (for example breast cancer, colon cancer, lung cancer or prostatic present sequence is the amino acid sequence of the novel isolated human protein 1682 of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Treating subject having tumorigenic disorder or angiogenic disorder caused by aberrant polypeptide e.g., N-formylpeptide receptor or nucleic acid, by administering a modulator.
                                        tumourigenic disorder, angiogenic disorder, aberrant gene expression, aberrant protein activity, cytostatic, antichyroxid, antichabetic, ophthalmological, cancer, breast cancer, colon cancer, lung cancer, prostatic cancer, disease, diabetic retinopathy, protein 1682.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lightcap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 4376; DB 7;
.larity 100.0%; Pred. No. 2.1e-292;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lescon A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure, SEQ ID NO 30, 454pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     oeth KJ, Tsai F,
Rudolph-Owen LA;
                                                                                                                                                                                                                               2002US-0353600P.

2002US-0364517P.

2002US-0371507P.

2002US-0371507P.

2002US-0372984P.

2002US-0382995P.

2002US-0385023P.

2002US-038863P.

2002US-0389395P.
                                                                                                                                                                                                                                                                                                                                                                            2002US-0391324P.
2002US-0395944P.
2002US-0397726P.
                                                                                                                                                                                                                                                                                                                                                                                                                      2002US-0403046P.
2002US-0405155P.
2002US-0406361P.
                                                                                                                                                                                                     30-JAN-2003; 2003WO-US002588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002US-0425456P.
2002US-0427626P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2002US-0421195P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Macbeth KJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2003-646176/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 841; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; ADE38368.
                                                                                                                                             WO2003065006-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 857 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Williamson MW,
                                                                                                                                                                                                                                                                          10-APR-2002; 2
16-APR-2002; 2
19-APR-2002; 2
24-MAY-2002; 2
                                                                                                                                                                                                                                                                                                                                   31-MAY-2002; 2
14-JUN-2002; 2
17-JUN-2002; 2
                                                                                                                                                                                                                                                                                                                                                                                                        22-JUL-2002; 2
13-AUG-2002; 2
22-AUG-2002; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-OCT-2002; 2
12-NOV-2002; 2
19-NOV-2002;
                                                                                                                   sapiens.
                                                                                                                                                                                                                                                15-MAR-2002;
09-APR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-AUG-2002;
                                                                                                                                                                                                                                                                                                                                                                            25-JUN-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-DEC-2002;
                                                                                                                                                                         07-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hunter JJ,
                                                                                                                 Ношо
```

61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120

MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS 1 MNKVRDIKNKFKWEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS

17

g ò

Ä.

857

protein;

standard;

ADE38369 ADE38369

ADE38369 ID ADE3 XX AC ADE3 XX DT 29-0

(first entry)

29-JAN-2004

09 76

٥;

Indels

```
Detecting a lung cancer-associated transcript in a cell from a patient for treating lung cancer, by contacting a biological sample from the patient with a polynucleotide that exhibits increased or decreased
                                                                                  18-APR-2001; 2001US-0284770P.
10-MAY-2001; 2001US-0290492P.
09-NOV-2001; 2001US-0339245P.
13-NOV-2001; 2001US-0350666P.
29-NOV-2001; 2001US-0334370P.
12-APR-2002; 2002US-03370P.
                                                                                                                                                                          EOS BIOTECHNOLOGY INC
                                                                                                                                                                                                                                                                                                   expression in lung cancer.
                                                                                                                                                                                                                        WPI; 2003-093161/08.
                                                                                                                                                                                                  Murray R;
                                                                                                                                                                                                                                       N-PSDB; ABX76453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 857 AA;
              WO200286443-A2
                                                            18-APR-2002;
                                      31-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                 Aziz N,
                                                                                                                                                                          (EOSB-)
   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lung cancer-associated polypeptide; cytostatic; emphysema; artinflammatory; antiasthmatic; non-small cell lung cancer; atelectasis; small cell lung cancer; benign lession; precancerous lession; bronchitis; chronic obstructive pulmonary disease; hypersensitivity pneumonitis; interstitial pulmonary fibrosis; fibrosis; asthma; bronchiectasis.
                                                                                      240
                                                                                                                                     300
                                                                                                                                                                                                            376
                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                            196
                                                                                                            256
                                                                                                                                                             316
                                                                                                                                                                                      360
                                                                                                                                                                                                                                                             436
                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                             496
                                                                                                                                                                                                                                                                                                                                                             556
                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                             919
                                                                                                                                                                                                                                                                                                                                                                                                                                     660
                                                                                                                                                                                                                                                                                                                                                                                                                                                              676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              856
VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                     ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                     EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                         EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                     NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                    NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                      SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                   SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIIIDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                     PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                        PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTIFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                      PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                        PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                     QILATPLONLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                            LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                     KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      KSIDPWERKSYWKNMLEAVHTIHOHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS
                                                                                                                                                                                                                                                                                                                                      QILATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                      LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lung cancer-associated polypeptide #317.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΑĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABUS6724 standard; protein; 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٧.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABU56724;
                                                            137
                                                                                     181
                                                                                                           197
                                                                                                                                                             257
                                                                                                                                                                                                                                                             377
                                                                                                                                                                                                                                                                                                                                                                                                            557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                797
             17
                                    121
                                                                                                                                     241
                                                                                                                                                                                     301
                                                                                                                                                                                                            317
                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                             437
                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                             497
                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABU56724
IID ABU5
IID ABU5
AC ABU5
XX ABU5
XX XX Lung
XX Lung
XX Lung
XX Lung
XX Inng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                           엄
                                                                                                         d
                                                                                                                                                          g
                                                                                                                                                                                   ò
                                                                                                                                                                                                          q
                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                         dd
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                    ò
                                                                                    \stackrel{>}{\circ}
                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
```

```
The invention relates to a method for detecting a lung cancer-associated transcript in a cell from a patient, comprising contacting a biological sample from the patient with a polynucleotide that selectively hybridises to a sequence that is at least 80 % identical to a gene that exhibits in cassed or decreased expression in lung cancer samples. Lung cancer as a polynucleotides and polypeptides are used for identifying a compound that modulates a lung cancer-associated polypeptide, for inhibiting proliferation of a lung cancer-associated cell to treat lung cancer in a patient and for treating a mammal having lung cancer in a patient and for treating a mammal having lung cancer in a modulatory compound identified. The methods are useful for treating lung cancer, such as small cell lung cancer, non-small cell lung cancer or other benign or precancerous lesions, e.g. atelectasis, lung cancer to there benign or precancerous lesions, e.g. atelectasis, hypersensitivity pneumonitis, interstitial pulmonary dibrosis, asthma and bronchiectasis. The genes, polymucleotides and polypeptides are useful compounds that modulate lung cancer, such as antibodies. Sequences compounds that modulate lung cancer, such as antibodies. Sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NSLRQTNYTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NSLROINKTKOSCPFGRVPVNLLNSPDCDVKIDDSVVPCFMKRQISRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 MNKVRDIKNKFKNEDLIDELSLNKISADTIDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MNKVRDIKNKFKNEDLIDELSLNKISADTIDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFABLKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EEEKKNISASTVI.TAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 4373; DB 6;
Pred. No. 3.4e-292;
1; Mismatches 0;
Claim 27; Page 434; 453pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 840; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
```

Ø

```
LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KSIDPWERKSYWKOMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LEBADNOTLDSYRNETAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                137
                                                                                                                                                                                                                                                                                                                                                                                                                    197
                                                                                                                                                                                                                                                                                                                                                                                                                                                        257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            557
                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                           Best Loca
Matches
d
                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \dot{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                             099
                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                          840
                                             420
                                                         480
                                                                                           PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH 496
                                                                                                                     540
                                                                                                                                                         009
                                                                                                                                                                           616
                                                                                                                                                                                                              676
                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                  736
                                                                                                                                                                                                                                                                                                                          856
                                                                                                                     QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                        KSIDPWERKSYWKNYMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                 SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                               IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                          PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                    PVNQMAKGTTEEMKYVLGQLVGLNSPNS1LKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
         SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                         LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                  LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                     IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                    SGNDSCELRNIKSVQNSHFKEPLVSDEXSSELIITDSITLKNKTESSLLAKLEETKEVQE
                                                                                                                               KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                 SVVKDSQVGTVNYMPPEAIKDMSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                             PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytostatic; gene therapy; vaccine; ovarian cancer; diagnosis; post-operative chemotherapy; radiation therapy; tumour prognosis; pre-cancerous lesion detection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ovarian cancer-associated protein #17
                                                                                                                                                                                                                                                                                                                                                                                                             Ź
                                                                                                                                                                                                                                                                                                                                                                                                           ADB80470 standard; protein; 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EOS BIOTECHNOLOGY INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-JUN-2001, 2001US-0299234P.
27-AUG-2001, 2001US-0315287P.
05-EPP-2001, 2001US-031544P.
13-NOV-2001, 2001US-0350666P.
12-APR-2002, 2002US-0372246P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-JUN-2002; 2002WO-US019297
                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO2002102235-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gish
                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                              K 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                04-DEC-2003
                                                                                                                                                                                                                                                                                                                                             ×.
                                                                                                 437
                                                                                                                                                                                                                                                                                                                          797
                                                              377
                                                                                                                                                         541
                                                                                                                                                                                                               617
                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                              857
                                                                                                                                                                                                                                                                                                                                                                                                                               ADB80470;
                          317
                                             361
                                                                                121
                                                                                                                     481
                                                                                                                                      497
                                                                                                                                                                                             601
                                                                                                                                                                                                                                                  677
                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (EOSB-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ното
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mack
                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                    ADB80470
                                                          Dp
                                                                          ò
                                                                                             g
                                                                                                                δ
                                                                                                                                Db
                                                                                                                                                       ò
                                                                                                                                                                    Ωp
                                                                                                                                                                                       ठे
                                                                                                                                                                                                           셤
                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                   P
                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                             à
```

```
The invention relates to a method of detecting an ovarian cancer-
associated transcript in a cell from a patient, by contacting a
biological sample from the patient with a polymuclocide that selectively
inybridizes to a sequence at least 80% identical to any of one of 80
nucleic acid sequences given in the specification. The method is useful
in diagnosing ovarian cancer and in identifying and using agents and/or
targets that inhibit ovarian cancer. The nucleic acid molecule,
polypeptide and the antibody may also be used in detecting ovarian
anonitoring and early detection of relapse following treatment,
monitoring response to therapy, in selecting patients for post-operative
chemotherapy or radiation therapy, in selecting mode of therapy,
and as vaccines. This sequence corresponds to one of the proteins used
for the detection method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16
                                                                            Detecting an ovarian cancer-associated transcript in a cell from a patient, comprises contacting a biological sample from the patient with polynucleotide that hybridizes to an ovarian cancer gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSIITKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 MNKVRDIKNKFKNEDLTDELSLNKISADITDNSGTVNQIMMMANNPEDWLSLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EBEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEVPESNQKQWQSKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  437 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEVPESNOKOWQAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 4373; DB 7;
Pred. No. 3.4e-292;
1; Mismatches 0;
                                                                                                                                                                                                         Claim 13; Page 287; 332pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
WPI; 2003-167431,
N-PSDB; ADB80469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Simi
```

ö

30

Sep

Thu

ö

60

120 136 180 196 240 256

300 316 360 376 420 436 480 496 540 556 600 616 999 919 720 736 780 964

```
EEEKKNISASTVITAQESFSGSLGHIQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                         NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                        317 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIIIDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVPQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVNQWAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                       MKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDMLSLLLKLEKNS
                                                                                           VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                        NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                  SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                               PEVPESNOKOWOSKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKKISPKSDVWSLGCILYYMTYGKTPPQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                  MNKVRDI KNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMAANNPEDWLSLLLKLEKNS
                                                                                                                                                     ANCKKFAFVH1SFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLE1ALRNLNLQKKQLLS
                                                                                                                                                                              137 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                              EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                            PEVPESNOKOWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACOLSTPYGOPACFOOOOH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
       Gaps
      ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D
H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ
       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nuclear factor kappa B (NF-kappaB) activating protein,
       ö
      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               830
       -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-DEC-2003
840;
                                                                                           61
                                                                                                                                                                                                                                                                                                    257
                                                                                                                                                                                                                                                                                                                                                                                                                        377
                                                                                                                                                     121
                                                                                                                                                                                                              181
                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             797
                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADC37169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADC37169
       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADC37169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                          व
                                                                                                                                                                           g
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                         δ
                                                                                                                                                   δ
                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
      676
                                  720
                                                              736
                                                                                           780
                                                                                                                       796
                                                                                                                                                     840
                                                                                                                                                                                856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequences (ADC37168-ADC37455), which activate nuclear factor kappa B (NF-kappaB). The proteins and their coding sequences are useful for treating a disease associated with NF-kappaB activation, such as inflammation, aucoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases, or ischaemic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or
                                                SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                        PVNQMAKGTTEEMKYVLGOLVGLNSPNS1LKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (NF-kappaB)
    KSIDPWERKSYWKMMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                         IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                    IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                   PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                 SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New purified protein that activates nuclear factor kappa B (NF-kappaE useful for treating inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                  Nuclear factor kappa B; NF-kappaB; inflammation; autoimmune disease; cancer; infectious disease; bone disease; AIDS; neurodegenerative disease; ischaemic disorder; Antiinflammatory; Immunomodulator; Cytostatic; Antimicrobial; Osteopathic; Anti-HIV; Neuroprotective; Nootropic; Cardiant; Gene therapy; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   present invention relates to novel proteins and their coding
                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 857;
                                                                                                                                                                                                                                                                                                                                                                                                         Nuclear factor kappa B (NF-kappaB) activating protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 4373; DB 7;
Pred. No. 3.4e-292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID NO 4; 938pp; English.
                                                                                                                                                                                                                                                                                                                    Ä
                                                                                                                                                                                                                                                                                                                    857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001JP-00368692.
2001US-0335829P.
2002JP-00291302.
2002US-0415769P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-DEC-2002; 2002WO-JP012644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99.9%;
                                                                                                                                                                                                                                                                                                                  ADC37171 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                            entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ä.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Muramatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-505282/47.
N-PSDB; ADC37170.
                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (ASAH ) ASAHI KASEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO2003048202-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                          857
                                                                                                                                                                                                            K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-DEC-2001; 2
05-DEC-2001; 2
03-OCT-2002; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-OCT-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                            18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-JUN-2003
                                                                                                                                                                                                                                        ĸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matsuda A,
                                                                                                                     737
                                                           677
                                                                                         721
                                                                                                                                                                              797
                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                               ADC37171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ischemic
                                  661
                                                                                                                                                  781
                                                                                                                                                                                                                                          857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The
                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                g
                                                                                                                  g
                                                                                                                                                                             g
                                                                                        ò
                                                                                                                                                  à
                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                       임
                               \delta
```

840

```
469
                                                                                   540
                                                                                                                                                                                                                            099
                                                                                                                                                                                                                                                             649
                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                709
                                                                                                                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is the protein sequence of Schizosaccharomyces pombe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Reducing growth of cancer cells comprises reducing Tyrosine Threonine Kinase (TTK) activity, useful in diagnosing and treating disorders with abnormal expression levels and activity of TTK, such as lung, colon, prostate and ovarian cancer.
                                   LEDADSQTIESYRNEIAFLNKLQQHSDKIIRLYDYEITEQYIYWWECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                              SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                   SIVKDSOVGTVNYNAPEAIRDMSSSRENSKIRTKVSPRSDVWSLGCILYYMTYGRTPFQH
                                                                                                                                                                                                                                                                                                                                                                                       PPISTSKWFDPKSICKTPSSNTLDDYMSCPRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                     QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                      QGLSTPLQSLQISGSSSINECISVNGRIYSILKQIGSGGSSKVFQVLNEKKQINAIKYVN
                                                                                                                                                                                                                                                590 KSINPWERKSYWKNWLEAVHIIHQHGIVHSDLKPANPVIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                         PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                         LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                            KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                   IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      threonine kinase; TTK; protein kinase; enzyme;
vint; colon cancer; breast cancer; tumour; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schizosaccharomyces pombe protein kinase Mphl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ä.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page 104-105; 113pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABP54948 standard; protein; 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-FEB-2002; 2002WO-US005278.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001US-0271254P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jefferson AB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2002-698650/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mphl; tyrosine threo
mitotic checkpoint;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schizosaccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CHIR ) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200268444-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Reinhard C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ×
                                                                                                                                                                                                                                                                                                                                                                                                      710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               830
                                                   410
                                                                                                                                                           541
                                                                                                                                                                                            530
                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABP54948;
                  121
                                                                                       181
                                                                                                                      470
                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                    650
                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABP54948
                                                                                                                                                                                   g
                                                                                                                                                                                                                                                         Sp
                                                                                                                                                                                                                                                                                       장염
                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                               g
                                                                                                                                                         8
                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENCKKFAFVHVSFAQFELSQGNLKKSEQLLHKAVETGAVPLQMLETAMRNLHLQKKQLLP 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RGSDSYELRGLKPIQTIYLKDSLVSNEKSSEL-MSDLIALKSKTDSS-LTKLEETK--- 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to novel proteins and their coding sequences (ADC37168-ADC37455), which activate nuclear factor kappa B (NF-kappaB). The proteins and their coding sequences are useful for treating a disease associated with NF-kappaB activation, such as inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases, or ischaemic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              72
                                                                                                                                                                                                                                                                                                                                                                                                                                                            B (NF-kappaB)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPLNDDLLNKLIGRYSQAIEVLPPDKYGQNESFARIQVRLAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          New purified protein that activates nuclear factor kappa B (NF-kappaBuseful for treating inflammation, autoimmune diseases, cancers, infectious diseases, bone diseases, AIDS, neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
Nuclear factor kappa B; NF-kappaB; inflammation; autoimmune disease; cancer; infectious disease; bone disease; AIDS; neurodegenerative disease; ischaemic disorder; Antiinflammatory; Immunomodulator; Cytostatic; Antimicrobial; Osteopathic; Anti-HIV; Neuroprotective; Nootropic; Cardiant; Gene therapy; murine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 830;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        72.7%; Score 3182.5; DB 7; 74.0%; Pred. No. 3.3e-210; ive 87; Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 2; 938pp; English.
                                                                                                                                                                                                                                            03-DEC-2001; 2001JP-00368692.
05-DEC-2001; 2001US-0335828P.
05-DEC-2002; 2002JP-00291302.
04-OCT-2002; 2002US-0415769P.
                                                                                                                                                                                                             03-DEC-2002; 2002WO-JP012644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 74.0°
Matches 622; Conservative
                                                                                                                                                                                                                                                                                                                                     Ä.
                                                                                                                                                                                                                                                                                                                                                                       Muramatsu
                                                                                                                                                                                                                                                                                                                                     (ASAH ) ASAHI KASEI
                                                                                                                                                                                                                                                                                                                                                                                                        2003-505282/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ischemic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-505282.
N-PSDB; ADC37168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 830 AA;
                                                                                                                                          WO2003048202-A2
                                                                                                           Mus musculus
                                                                                                                                                                              12-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                         Matsuda A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
```

6 %

∂ 9

95 A

ò

g

à

8 8

ò

Yeast; tyrosine threonine kinase; TTK; cancer; cytostatic; mitotic checkpoint gene; MPH1.

Schizosaccharomyces pombe.

US2003045491-A1.

06-MAR-2003.

11-AUG-2003 (first entry)

21-FEB-2002; 2002US-00081119. 23-FEB-2001; 2001US-0289813P.

Reinhard C, Jefferson AB,

2003-456566/43.

WPI; 2003-456566/ N-PSDB; ACA62271.

m m

(REIN/) REINHARD C. (JEFF/) JEFFERSON A (CHAN/) CHAN V W.

```
protein kinase Mphl. The invention relates to human tyrosine threonine kinase (TTK) polypeptides (see ABP$4938) and polynucleotides (see ABP$4938). And polynucleotides (see MP$19344), which are the human homologues of Saccharomyees deservaisae mpsl and S. pombe mphl, mitotic checkpoint genes. TTK polynucleotides and polypeptides of the invention encompass polynucleotides and polypeptides for having sequence similarity or sequence identity to human TTK and other cannot be products related to TTK, such as S. pombe mphl. The invention is based on the finding that TTK is differentially expressed in various forms of cannoer. It provides methods for the identification of cancerous cells, by detection of expression levels of TTK, as well as diagnostic, prognostic and theraputic methods. These methods can be used as the basis of artional therapy. Assays for identifying molecules that modulate the activity of these genes in caneers, as well as methods of inhibiting tumour growth by inhibiting the activity of TTK are also provided
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ODAEIGYRNSLRQINKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKKQTSRSECRD 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R-----KVNTEQKHTTFEQPVFSVSKQSPPISTS---KWFDPKSICKTPSSNTLDDYM 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EVNFINADQTTIQGYKNBIALLRKL-SGNDRIIKLYAAEVNDTLGQLNMVMECGETDLAN 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   596 WLKK--KKSIDPWERKSYWKOMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIAN 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OMOPDITISVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKKISPKSDVWSLGCILYYMTY 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GRAPFAH-LKMIQALAAIPNEQYHIHFPEVALPANAVQEKEGSLPGVTVGPDIMDVMKRC 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----HSDGTVTGDTLRRQSSGATALE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LVV---PGSK-----PSGNDSCELR--NLKSVQNSHFKEPLVSDEKSSELIITDSITLKNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71 RLVSHPRTKNFDLQGNGGQNSALKEVNTPAYQSMHHFEHLITPLPS------TNASH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EYTLTDPSKTSDTKNSTEADEDIEMKSREVSPASNSVAATTLKPLQLHNTPLQTSQEHPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            293 FDNSQATPIPKRQ-----QDVVTVANLQFIKLGVVGKGGSSMVXRIFSPDNSRLYALK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           538 YVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ--YIYMVMECGNIDLNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---DIODVLKCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          344 TESSLLAKLEETKEYQEPE-VPESNOK-----OWQAKRKSECINONPAASSNHWOIPELA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SCRRTPVVKNDFPPACQL----STPYGQP-ACFQQQQ-----HQI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       233 PSFHPSQFESSFSPRVQFDHDVERRASELHSRPVTVFQEPQRSASQPYESHALSPKVAPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----LATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLN-EKKQIYAIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5; Length 678;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GKTPFQQIINQISKLHAIIDPNHEIEFPD-----IPEK----
                                                                                                                                                                                                                                                                                                                                                                                                                  15.4%; Score 673.5; DB 5;
llarity 30.9%; Pred. No. 1.6e-37;
Conservative 102; Mismatches 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |:|| ::|::||||| ||::
LERDQRKRLTIPELLVHPFLNPLPSYLTPLAK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LKRDPKQRISIPELLAHPYVQIQTHPVNQMAK 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32 QDPELYFKN---DTFSSKSS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 195; Conserv
                                                                                                                                                                                                                                                                                                                                                                          Sequence 678 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      584
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   du
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
```

Detecting cancer in a subject, by comparing expression levels of tyrosine threonine kinase polypeptide or polynucleotide in a subject cell and a normal cell, where an increase in the expression level in the test cell

is indicative of cancer.

```
The invention relates to detecting cancer (other than ovarian cancer) in a subject, comprising comparing the expression levels of tyrosine through thase (TTK, a mitotic checkpoint gene) polypeptide or through thase (TTK, a mitotic checkpoint gene) polypeptide or comparing the activity compared to that in the normal cell, or nucleic acid in the test cell compared to that in the normal cell, or nucleic acid in the test cell compared to that in the normal cell, or nucleic acid in the test cell compared to that in the normal cell, or nucleic acid in the test cell compared to that in the normal cell, or in the cell), an assay for identifying a candidate agent that reduces (TTK polypeptide in the presence of a candidate agent that reduces (TTK polypeptide in the presence of a candidate agent in the activity of TTK polypeptide in the presence of a candidate agent that reduces (TTK polypeptide in the presence of a candidate agent in a candidate agent, and (ii) comparing the activity of TTK polypeptide in the presence of a candidate agent (CTTK polypeptide in the presence of a candidate agent (CTTK polypeptide activity) in the activity of TTK polypeptide activity of TTK polypeptide activity of agent), identifying an agent that reduces TTK activity (CTTK polypeptide with a candidate agent, and (ii) determining the prognosis of a cancerous cell displaying elevated expression of TTK renocding comparing a cancerous cell displaying elevated expression of TTK renocding polymucleotide in the test cancer cell of a subject; and (ii) determining a cancer cell (CTTK polypeptide activity) and assessing that a level of expression of the polymucleotide in the test cancer cell of activity and assession of the polymucleotide in the test cancer cell cancer cell where the level of expression of TTK in the test cancer cell indicative to the level of expression of the polymucleotide in the reduced growth of a cancerous cells, identifying an admitted agent that creduces growth of a cancerous cells, identifying an agent that creduces growth 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.4%; Score 673.5; DB 7; Length 678;
larity 30.9%; Pred. No. 1.6e-37;
Conservative 102; Mismatches 210; Indels 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure, Page 57-59; 79pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 195; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 678 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
```

23;

ABU61621 standard; protein; 678

RESULT 12 ABU61621 ID ABU ABU61621;

XXX

유성

a

CD

8

유 유

상

ò 음 ò

```
9905-0139452P

9905-0139453P

9905-0139455P

9905-0139456P

9905-0139456P

9905-0139460P

9905-0139460P

9905-0139461P

9905-0139461P

9905-0139461P

9905-0139461P

9905-0139463P

9905-0139463P

9905-0139463P

9905-0139463P

9905-0139463P

9905-0139463P

9905-0139463P

9905-014083P

9905-014083P

9905-014083P

9905-014083P

9905-014083P

9905-014083P

9905-0141287P

9905-0141287P
            9905-012462P-9905-0128234P-9905-0128234P-9905-0130845P-9905-0130891P-9905-0130891P-9905-013248P-9905-0132486P-9905-0132486P-9905-0132486P-9905-0132486P-9905-0132486P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0134218P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-0135323P-9905-013523P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-0135232P-9905-013522P-9905-013522P-9905-013522P-9905-013522P-9905-013522P-9905-013522P-9905-013522P-9905-013522P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9905 0136392P
9905 0136782P
9905 0137528P
9905 0137528P
9905 0137528P
9905 0138094P
9905 0138640P
9905 0138847P
29 - MAR 1999 )
01 - APR 1999 )
06 - APR 1999 )
16 - APR 1999 )
16 - APR 1999 )
21 - APR 1999 )
23 - APR 1999 )
23 - APR 1999 )
24 - APR 1999 )
06 - MAY 1999 )
11 - MAY 1999 )
11 - MAY 1999 )
12 - MAY 1999 )
14 - MAY 1999 )
14 - MAY 1999 )
14 - MAY 1999 )
15 - MAY 1999 )
16 - MAY 1999 )
17 - MAY 1999 )
18 - MAY 1999 )
25 - MAY 1999 )
26 - MAY 1999 )
27 - MAY 1999 )
28 - MAY 1999 )
28 - MAY 1999 )
29 - MAY 1999 )
21 - MAY 1999 )
21 - MAY 1999 )
22 - MAY 1999 )
23 - MAY 1999 )
24 - MAY 1999 )
25 - MAY 1999 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , 4661-NUL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , 9991-NUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - YOV-19
   447
                                                                                                                                                            397
                                                                                                                                                                                           172
                                                                                                                                                                                                                                                               232
                                                                                                                                                                                                                                                                                                  482
                                                                                                                                                                                                                                                                                                                                                                    537
                                                                                                                                                                                                                                                                                                                                                                                        FDNSQATPIPKRQ------QDVVTVANLQFIKLGVVGKGGSSMVYRIFSPDNSRLYALK 345
                                                                                                                                                                                                                                                                                                                                                                                                                                        595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WLKK--KKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIAN 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRAPFAH-LKMIQAIAAIPNEQYHIHFPEVALPANAVQEKEGSLPGVTVGPDLMDVMKRC 583
                                                                                                                         121
                    QDAEIGYRNSLROTNKTKOSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKROTSRSECRD 292
                                                                                      LVV--PGSK-----PSGNDSCELR--NLKSVQNSHFKEPLVSDEKSSELIITDSITLKNK 343
                                                     70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                               173 EYTLTDPSKTSDTKNSTEADEDIEMKSREVSPASNSVAATTLKPLQIEQEHPK
                                                                                                                                                                                                                                                                                                                        ----LATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLN-EKKQIYAIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSWI-----
                                                                                                                                                          TESSLILAKLEETKEYQEPE-VPESNOK-----QWQAKRKSECINQNPAASSNHWQIPELA
                                                                                                                                                                                                                              R-----KVNTEQKHTTFEQPVFSVSKQSPPISTS---KWFDPKSICKTPSSNTLDDYM
                                                                                                                                                                                                                                                                                                  SCFRTPVVKNDFPPACQL-----STPYGQP-ACFQQQQ------HQI----
                                                                                                                                                                                                                                                                                                                                                                                                                                        YVNLEBADNOTLDSYRNEIAYLNKLOQHSDKIIRLYDYBITDQ--YIYMVMECGNIDLNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OMOPDITISTVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GKTPFQQ1INQ1SKLHAIIDPNHEIEFPD-----IPEK-----DLQDVLKCC
                                                                                                              Arabidopsis thaliana protein fragment SEQ ID NO: 47506.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LKRDPKQRISIPELLAHPYVQIQTHPVNQMAK 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |:|| ::|::||||| ||::
LERDORKRLTIPELLVHPFLNPLPSYLTPLAK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAG38500 standard; protein; 777 AA
                                            | | : :: | :: | CDPELYFKN---DIFSSKSS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0121825P.
99US-0123180P.
99US-0123548P.
99US-0125788P.
99US-0126264P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000EP-00301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06-SEP-2000
                                                                                                                         71
                                                                                                                                                              344
                                                                                                                                                                                                                                                                                                    448
                                                                                                                                                                                                                                                                                                                                                                                                       663
                                                                                                                                                                                                                                                                                                                                                                                                                                          538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAG38500;
                                                       32
                                                                                          293
                                                                                                                                                                                                                                  398
                                                                                                                                                                                                                                                                                                                                                                        483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAG38500
```

CC

8 쉼

8 8 8

QQ 8 8

```
9905-0144331P.
9905-0144331P.
9905-0144331P.
9905-0144334P.
9905-0144334P.
9905-0144334P.
9905-0144552P.
9905-0145684P.
9905-0145688P.
9905-0145688P.
9905-0145688P.
9905-0145688P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-014568P.
9905-01468B.
9905-014968P.
9905-015968P.
9905-015968P.
9905-015968P.
9905-015968P.
9905-015968P.
9905-015968P.
9905-015968P.
9905-015968P.
    $\\ \text{RKERT RESTRICTED IN THE RESTRICT RESTR
```

PR 12-OCT-1999; 99US-0158369P. PR 13-OCT-1999; 99US-0159294P. PR 13-OCT-1999; 99US-0159294P. PR 14-OCT-1999; 99US-0159294P. PR 14-OCT-1999; 99US-015923P. PR 14-OCT-1999; 99US-015933P. PR 14-OCT-1999; 99US-015933P. PR 14-OCT-1999; 99US-015953P. PR 14-OCT-1999; 99US-015953P. PR 21-OCT-1999; 99US-0160767P. PR 21-OCT-1999; 99US-016076P. PR 21-OCT-1999; 99US-016076P. PR 22-OCT-1999; 99US-016076P. PR 22-OCT-1999; 99US-016098P. PR 22-OCT-1999; 99US-016098P. PR 22-OCT-1999; 99US-016140P. PR 25-OCT-1999; 99US-016140F. PR 26-OCT-1999; 99US-016140F. PR 26-OCT-1999; 99US-016140F. PR 26-OCT-1999; 99US-016140F. PR 28-OCT-1999; 99US-01614	98 47	OY 99 RFALKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNVKKSKQ 148 15 ASRNTRLYTAEGGRSQDVTLSQSLAANTLTQDTTNNLAITSVAGESASITQPTVSEHFN 134 OY 149 LLQKAVRRGAVPLEMILENLANLQKKQLLSEEEKKNLSASTVTTAQESFGSL 203 DD 135 PSDRQMDFGKSAVTSLESNLDVQRKSQSLIGTSQDMSWDATNQAEA 180	QY 204 GHLQNRNNSC-DSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNK-TKQSCPFGRVPVN 261 Db ::	322 2 32 2 36 A 272 2 Q A 4 A 4 A 4 A 4 A 4 A 4 A 4 A 4 A 4 A	442 TLDDYMSCFRTPVKKUPFPPACOLSTPYGQPACFQQQQHQILATPLQNLQVLA 49 325 KQQQITTGLEAPVGSSIVGSDGQANARLPEELHTSVSQPKSDKHEKVA 37 495 SSGANECISVKGRIYSILKQIGSGGSKVFQVLNEKKQIYAIKYVNLEE 54
Q, Q	О П	0 1 0 1		0 1 0 1	

```
990S-0136392P-
990S-0136782P-
990S-0137528P-
990S-0137528P-
990S-0138640P-
990S-0139119P-
990S-0139119P-
990S-0139119P-
990S-0139452P-
990S-0139453P-
990S-0139453P-
990S-0139453P-
990S-0139453P-
990S-0139453P-
990S-0139453P-
990S-0139453P-
990S-0139453P-
990S-0139463P-
990S-0139463P-
990S-0139463P-
990S-0139463P-
990S-0139463P-
990S-0139463P-
990S-0140334P-
990S-0140334P-
990S-0140334P-
990S-0140334P-
990S-0140334P-
990S-0140334P-
990S-0140344P-
990S-0142331P-
990S-0143331P-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0144334P

99US-0144334P

99US-0144834P

99US-0144884P

99US-0145884P

99US-014588P

99US-014588P

99US-014508P

99US-014508P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0146386P.
99US-0146388P.
99US-0146389P.
99US-0147038P.
27-MAY-1999;
28-MAY-1999;
01-JUN-1999;
03-JUN-1999;
04-JUN-1999;
08-JUN-1999;
10-JUN-1999;
                                                                                                                                                                   18 - JUN - 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-JUL-1999;
12-JUL-1999;
13-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-JUL-1999;
19-JUL-1999;
19-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-JUL-1999;
19-JUL-1999;
20-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-JUL-1999;
20-JUL-1999;
21-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22 - UUL - 1999;
22 - UUL - 1999;
22 - UUL - 1999;
23 - UUL - 1999;
33 - UUL - 1999;
23 - UUL - 1999;
24 - UUL - 1999;
27 - UUL - 1999;
27 - UUL - 1999;
27 - UUL - 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-JUL-1999;
02-AUG-1999;
02-AUG-1999;
02-AUG-1999;
03-AUG-1999;
                                                                                                                                          16-JUN-1999;
                                                                                                      10-JUN-1999
                                                                                                                   14-JUN-1999;
                                                                                                                                                                                                                                                                          18-JUN-1999)
                                                                                                                                                                                                                                                                                                                                                     23-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                   30-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-JUL-1999;
21-JUL-1999;
                                                                                                                                                                                                                                                                                                                          21-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                 23 - JUN - 1999
                                                                                                                                                                                                                                                                                                                                                                               24-JUN-1999
                                                                                                                                                                                                                                                                                                    18-JUN-1999
                                                                                                                                                                                                                                                                                                                                         22-JUN-1999
 PANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPBAIKDMSSRBNGKSKS 693
            582 IYMVMECGNIDLNSWLKKK-----KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLK 633
                           KISPKSDVWSLGCILYYMTYGKTPPQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLK 753
                                                                                                                                612 KCGRPSDIWSLGCILYQWVGRIPFADYKTFWAKFKVITDPNHEITYNQLSNPWLIDLMK 671
                                                                                                                                                                                                                                                                                                                                                            Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana protein fragment SEQ ID NO: 47507.
                                                                                                                                                                   CCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                KCLAWDRNQRWRIPELLQHPFL 693
                                                                                                                                                                                                                                                          AAG38501 standard; protein; 720 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9903-0121825P.
9903-0123180P.
9903-0125788P.
9905-0125788P.
9905-0126264P.
9905-0127462P.
9905-0128234P.
9905-0130891P.
9905-0130891P.
9905-0130891P.
9905-0132486P.
9905-0132486P.
9905-0132486P.
9905-0132486P.
9905-0132486P.
9905-0132486P.
9905-0132486P.
9905-0132486P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    990S-0134768P.
990S-0134941P.
99US-0135124P.
99US-0135353P.
99US-0135629P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-FEB-2000; 2000EP-00301439
                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                            18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-FEB-1999; 05-MAR-1999; 23-MAR-1999; 23-MAR-1999; 25-MAR-1999; 25-MAR-1999; 01-APR-1999; 06-APR-1999; 05-APR-1999; 05-MAY-1999; 05-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                          EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAY-1999;
24-MAY-1999;
25-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-SEP-2000
                                                                                       554
                                                                                                                                                                                                                                                                                   AAG38501;
                                                             634
                                                                                                                594
                                                                                                                                                                                          672
                                                                                                                                                                   754
                                                                                                                                                                                                                                RESULT 14
AAG38501
                                  g
                                                     8
                                                                               90 20 90
                                                                                                                                                                ò
                                                                                                                                                                                      ద
```

```
9905-0147204P.
9905-0147302P.
9905-0147303P.
9905-0147303P.
9905-0147319P.
9905-0148311P.
9905-0148311P.
9905-0148311P.
9905-0149328P.
9905-0149328P.
9905-0149328P.
9905-0149328P.
9905-0149328P.
9905-0149328P.
9905-0149328P.
9905-0149328P.
9905-015103P.
                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0160770P.
99US-0160814P.
99US-0160815P.
                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0160980P.
99US-0160981P.
99US-0160989P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0161359P,
99US-0161360P.
99US-0161361P.
99US-0161920P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0161405P.
99US-0161406P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0161404P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0161992P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0161993P
                                                                                                                                                                                                                                                                                  04-0CT-1999)
05-0CT-1999)
07-0CT-1999)
08-0CT-1999)
13-0CT-1999)
13-0CT-1999)
14-0CT-1999)
14-0CT-1999)
14-0CT-1999)
14-0CT-1999)
14-0CT-1999)
18-0CT-1999)
18-0CT-1999)
                                                                                                                                                                                   30-AUG-1999;
31-AUG-1999;
01-SEP-1999;
07-SEP-1999;
10-SEP-1999;
13-SEP-1999;
                                                                                                             20-AUG-1999;
20-AUG-1999;
20-AUG-1999;
23-AUG-1999;
                                                                     12-AUG-1999;
13-AUG-1999;
13-AUG-1999;
                                                                                         16-AUG-1999;
17-AUG-1999;
18-AUG-1999;
                                                                                                                                                 25-AUG-1999;
26-AUG-1999;
                                                                                                                                                                                                                                    -SEP-1999
                                                                                                                                                                                                                                                         -SEP-1999
                                                                                                                                                                                                                                                                              29-SEP-1999
```

```
24;
                                                                                   107 QEPDDARDYFQMARAN-----CKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVP 160
                                                                                                                                                               SRGQTTKARFLYGENMPPODAEIGYRNSLRQTNK-TKQSCPFGRVPVNLLNSPDCDVKTD 273
                                                                                                                                                                                                                                                                                                  190
                                                                                                                                                                                                                                                                                                                                                                                                                    PSCC----PSSKVSNILHPNKDATASEMPASTN---DPEVRVKETDTSKQQQITTGLEAP 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----ISVKGRIYSILKQIGSGGSSKVPQVLNEKKQIYAIKYVNLEBADNQTLDSYRNE 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390 IGYLKKLKGKTN-IIQLIDYEVTDKTLLQEVLNGTMSNKDGRVKEDGFIYMVLEYGEIDL 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRIS 765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LIDEGIANQMQEDITISVVKDSQVGTVNYMPEAIKDMSSSRENGKSKSKISPKSDVWSLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        449 AHMLSQKWREIEGSDRIIDENWLRFYWQQILQAVNTIHEERIVHSDLKPANFLLVRGFLK
                                                                                                                                                                                                                                                                                        HSSSAPMLNAT-----THVSRSYVEAD------SNANPHAVQSQGNL
                                                                                                                                                                                                                                                                                                                                                                                         394 PELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWPDPKSICKTPSSNTLDDYMSCFRTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                     454 VVKNDFPPACQLSTPYGQP----ACFQQQQHQILATPLQNL---QVLASSSANEC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330 YDPDLFFKYNGKLYQRLGKIGSGGSSEVHKVISSDCTIYALKKIKLKGRDYATAYGFCQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IAYLNKLQQHSDKIIRLYDYEITDQ-------YIYMVMECGNIDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         594 NSWLKKK-----KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ÖRSQDVVTLSQSLAANTLTQDTTNNLAITSVAGESASITQPTVSEHFNPSDRQMDFGKSA
                                                                                                                                               161 LEMLETALRNINLOKKOLLSEEEKKOLLSASTVLTAQE----SFSGSLGHLONRNNSC-D
                                                                                                                                                                                                                              274 DSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELI
                                                                                                                                                                                                                                                                                                                                334 ITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQI
                                                        Gaps
                           Length 720;
                                                      99; Mismatches 242; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana protein fragment SEQ ID NO: 47508.
                      Query Match
Best Local Similarity 28.1%; Pred. No. 2.3e-35;
Matches 205; Conservative 99; Mismatches 242.
                                                                                                                                                                                                                                                                                                     AAG38502 standard; protein; 638 AA.
99US-0162142P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |||||| ||:
IPELLOHPFL 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPELLAHPYV 775
29-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            267
                                                                                                                                                                                                                                                                                                                                                                                                                           227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         627
                                                                                                                    30
                                                                                                                                                                                                            215
                                                                                                                                                                                                                                                                                                   174
                                                                                                                                                                                                                                                                                                                                                               191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAG38502;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PR
                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \stackrel{\circ}{\sigma}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                            g
                                                                                                                                                                                                                                      ВÞ
                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                 \dot{\delta}
                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                  ò
```

```
9905-0141287P.
9905-0142054P.
9905-0142054P.
9905-0142803P.
9905-0142803P.
9905-0142803P.
9905-0142803P.
9905-01436342P.
9905-014363433P.
9905-01443334P.
9905-0144334P.
9905-01443334P.
9905-01443334P.
9905-01443334P.
9905-0149329P.
9905-0149329P.
9905-0149329P.
9905-0149329P.
9905-0149329P.
9905-0149329P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0152363P.
99US-0153070P.
99US-0153758P.
                                                                                                                                                                                                                                                                                                                                                                                    20-AUG-1999;
20-AUG-1999;
23-AUG-1999;
25-AUG-1999;
26-AUG-1999;
27-AUG-1999;
27-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                               20-AUG-1999
                                                 990S-0121825P.
990S-0123180P.
990S-012548P.
990S-012548P.
990S-012648P.
990S-0127462P.
990S-013081P.
990S-013081P.
990S-013081P.
990S-0132484P.
990S-0132484P.
990S-0132484P.
990S-0132484P.
990S-0132484P.
990S-0132484P.
990S-0132484P.
990S-0132484P.
990S-0132482P.
990S-0132482P.
990S-0132482P.
990S-0132482P.
990S-0132482P.
990S-0132482P.
990S-0132482P.
990S-0132482P.
990S-0134768P.
990S-0134768P.
990S-0134768P.
990S-013452P.
990S-013452P.
990S-013452P.
990S-013462P.
990S-013462P.
990S-0139462P.
990S-0139463P.
990S-0139463P.
990S-0139463P.
990S-0139463P.
990S-0139463P.
990S-0139463P.
990S-0139463P.
990S-0139463P.
                                       2000EP-00301439
Arabidopsis thaliana
             EP1033405-A2
                                      25-FEB-2000;
                         06-SEP-2000
82
```

```
VLNEKKQIYAIKYVNLEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQ----- 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----SNANPHAVQSQGNLPSCC----PSSKVSNILHPNKDATASEMPA 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HISVSSQPQKSDKHEKVASSKGPSAPRKRNYDPDLFFKVNGKLYQRLGKIGSGGSSEVHK 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188 SASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYG---ENMPPQDAEIGYRNSLR 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245 QTNK-TKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGN 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               304 DSCELRNLKSVQNSHFKEPLVSDEKSSELJITDSITLKNKTESSLLAKLEETKEYQEPEV 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96 -----THVSRSYVEAD- 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             364 PESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOSPPI 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           424 STSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQP----ACFQQQQ 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STN----DPEVRVKETDTSKQQQITTGLEAPVG------SSIYGSDGQANARLPEEL 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HQILATPLQNL---QVLASSSANEC-----ISVKGRIYSILKQIGSGGSSKVFQ 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLESNLDVORKSOSLIGTSODMEWDATNOABASHLDACIGSKHONLPSVDSEVSLKSEYK 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70 DSSSLAKIQGQLGEFP-NFLNQP--------RTRC------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14.6%; Score 640.5; DB 3; Length 638; 29.2%; Pred. No. 2.8e-35; ive 88; Mismatches 218; Indels 147;
                                                      99US-0155659P.
99US-0156458P.
99US-0155596P.
99US-0157753P.
99US-0157865P.
99US-015865P.
99US-0158232P.
                                                                                                                                                                                            990S-0159329P.
990S-0159330P.
990S-0159331P.
990S-0159637P.
                                                                                                                                                            99US-0159293P.
99US-0159294P.
99US-0159295P.
                                                                                                                                                                                                                                                                              99US-0160767P.
99US-0160768P.
99US-0160770P.
                                                                                                                                                                                                                                                                                                                 99US-0160814P.
99US-0160815P.
99US-0160980P.
                                                                                                                                                                                                                                                                                                                                                  99US-0160981P.
99US-0160989P.
99US-0161404P.
                                                                                                                                                                                                                                                                                                                                                                                     99US-0161405P.
99US-0161406P.
99US-0161359P.
                                                                                                                                                                                                                                                        99US-0159584P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0161993P
99US-0162142P
                                                                                                                                                                                                                                                                                                                                                                                                                        39US-0161360P
                                                                                                                                                                                                                                                                                                                                                                                                                                    39US-0161361P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 29.29
Matches 187; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

336	615	396	675	456	735	514		
278 VISSDCTIYALKKIKLKGRDYATAYGFCQEIGYLKKLKGKTN-IIQLIDYEVTDKTLLQE 336	YIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNM 615	337 VLNGTMSNKDGRVKEDGFIYMVLEYGEIDLAHMLSQKWREIEGSDRTIDENWLRFYWQQI 396	616 LEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNXMP 675	LQAVNTIHEERIVHSDLKPANFLLVRGFLKLIDFGLAKAINSDTTNIQRDSQVGTLSYMS	676 PEAIKDMSSSRENGKSKISPKSDVWSLGCILYYMTYGKTPPQQIINQISKLHAIIDPN 735	457 PEAFM-CNESDENGNT-IKCGRPSDIWSLGCILYQMVYGRTPFADYKTFWAKFKVITDPN 514	736 HEIEFPDIPEKDLODVLKCCLKRDPKQRISIPELLAHPYV 775	515 HEITYNQLSNPWLIDLMKKCLAWDRNQRWRIPELLQHPFL 554
278	581	337	616	397	929	457	736	515
qq	ζ	qq	λõ	qq	λö	qq	δ	qq

Search completed: September 29, 2004, 16:16:14 Job time: 141 secs Sequence 4, Appli Sequence 2, Appli Sequence 2, Appli Sequence 24, Appli Sequence 24, Appli Sequence 24, Appli Sequence 25, Appli Sequence 29, Appli Sequence 5, Appli

```
RESULT 1
US-08-472-934-8
i Sequence 8, Application US/08472934
j Sequence 8, Application US/08472934
j Patent No. 575346
j GENERAL INFORMATION:
j APPLICANT: JOHNSON, GRY L.
TITLE OF INVENTION: RESPONSIVENESS TO EXTERNAL SIGNALS
i NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
j ADDRESSEE: Lahive and Cockfield
STREET: 60 State Street
                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: DESCRIBER OF A STATE: BOSCOLURY: U.S.A.

ZITE: D2109
COMPUTER: D2109 disk
COMPUTER: E10PDY disk
COMPUTER: TIME PC COMPATIBLE
COMPUTER: TIME PC COMPATIBLE
COMPUTER: PATENTINE PC-DCS/MS-DCS
SOFTWARE: PATENTINE PC-DCS/MS-DCS
SOFTWARE: PATENTINE DATA:
APPLICATION NUMBER: US/08/472,934
FILING DATE: 06-UUN-1995
CLASSIFICATION DATA:
APPLICATION NUMBER: US 08/440,421
FILING DATE: 15-May-1995
RICH APPLICATION DATA:
APPLICATION NUMBER: US 08/440,421
FILING DATE: 11-FEB-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 5,405,941
FILING DATE: 11-ADT-1993
RICH APPLICATION DATA:
APPLICATION NUMBER: US 5,405,941
FILING DATE: 14-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 5,405,941
FILING DATE: 14-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 5,405,941
FILING DATE: 14-OCT-1994
PRIOR APPLICATION NUMBER: US 5,405,941
FILING DATE: 11-OCT-1994
PRIOR APPLICATION NUMBER: US 5,405,941
FILING DATE: 11-OCT-1994
ATPORNEY/AGENT INFORMATION: TT EACH
US-08-834-108-4
US-09-031-563-2
US-09-032-505-10
US-09-258-000-2
US-09-32-27-24
US-09-258-000-24
US-09-258-000-24
US-09-258-000-24
US-09-258-000-24
US-09-291-417D-95
US-09-391-417D-95
US-09-392-277-25
US-09-392-277-25
US-09-38-000-25
                                                                                                                                                                                                                                ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Giulio A. Deconti, Jr. Esq.
REGISTRATION NUMBER: 31,503
REFERENCE/DOCKET NUMBER: CPI-004DVCP2
TELECOMMULICATION INFORMATION:
TELEPHONE: (617) 227-7400
TELEFAX: (617) 227-5941
   CITY: Boston
STATE: Massacl
COUNTRY: U.S.
   Appli
Appli
Appli
                                                                               September 29, 2004, 16:10:15; Search time 34 Seconds (without alignments) 1276.984 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 8, A
Sequence 12,
Sequence 4, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 10, Sequence 10, Sequence 14, Sequence 2, A Sequence 6, A Sequence 6, A Sequence 6, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, 1
Sequence 10,
Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 8, Sequence 8, Sequence 8,
                                                                                                                            US-10-081-119-14
4376
1 MNKVRDIKNKFKNEDLTDEL......GGESHNSSSSKTFEKKRGKK 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                  Issued Patents_AA:*

(GgT2 6/ptodata/2/iaa/5A COMB.pep:*
(GgT2 6/ptodata/2/iaa/6A_COMB.pep:*
(GgT2 6/ptodata/2/iaa/6A_COMB.pep:*
(GgT2 6/ptodata/2/iaa/6B_COMB.pep:*
(GgT2 6/ptodata/2/iaa/PCTUS COMB.pep:*
(GgT2 6/ptodata/2/iaa/PCTUS COMB.pep:*
                GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-472-934-8
US-08-472-934-8
US-08-471-1466-8
US-08-461-1456-8
US-08-471-1456-8
US-08-473-995-4
US-08-471-1466-10
US-08-471-1466-10
US-08-471-1466-10
US-08-471-1466-10
US-08-471-1466-10
US-08-471-1466-10
US-08-481-10
                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                            389414 segs, 51625971 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                               Listing first 45 summaries
                                                            - protein search, using sw model
                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                            OM protein
                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                            Searched:
                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
```

```
INFORMATION FOR SEQ ID NO: 8
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 80203
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 192 PGLEN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-323-460A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
         g
                                                                 ઠે
                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89 --- QNESF--ARIQVRFAELKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNV 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144 KKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLSEEEKKNLSASTVLTAQESFSGSL 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLL 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---LHVFVPDSLABEKK-----IILQLL 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217 NAATGKÖCSKDPÖÖVFMDAFLLLTKHGDRARÖ-----SEDGWGTWBARAVKIVPQVETV 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----QNSHFKEPLVSDEKSSELIITDSITLKNKTESS--LLAK-LEET 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    271 DTLRSMQVDNLLLVVWESAH----LVLQRKAFQQSIEGLMTVRHEQTSSQPIIAKGLQQL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356 K--------EYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQ 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327 KNDALELCNRISDAIDRVDHMFTLEF-DAEVEESESATLQQYYREAMIQGYNFGFEYHKE 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        386 VVRLMSGEFROKIG--DKYITFAQKMMNYVLJKCESGRGTRPRWATQGFDFLQAIEPAFI 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---NL 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  619 RKVTFKWQRGNKIĞBĞQYGKVYTCISVDTGELMAMKEIRFQPNDHKTIKETADELKIFEG 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562 LQQHSDKIIRLYDYEITDQYIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEA 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :: :: | : | : | | | | | :: | | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | | :: | | | :: | | | :: | | | :: | | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | :: | | :: | :: | | :: | :: | | :: | :: | | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              619 VHTIHQHGIVHSDLKPAN-FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMP 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPN 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------QIGSGGSSKVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNK 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34 LMVYFDYMRSWIQMLQQLPQASHSLKNLLEEEWNFTKEITHYIRGGEAQAGKLFCDIAGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            264 NS---PDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94 IJKSTGSFLESGLQESCAELWTXADDNGAAD--ELRR-----SVIEIS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   435 CKTPSSNTLDDYMS-----CFRTPVVKNDFPPAC---QLSTPYGQPACFQQ--QQHQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           500 IPTPEGFRGSSVPENDRLASIAABLQFRSLSRHSSPTEBRDEPAYPRSDSSGSTRRSWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393 I-----PELARKVNTEQKHTTFEQPVFSV-----SKQSPPISTSKWFD-----PKSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           444 SALPE----DDFLSLQALMNECIGHVIGKPHSPVTAIHRNSPRPVKVPRCHSDPPNPHLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                    39 IMMMANNPEDWLSLLLKLEKNSVPLSDAL----LNKLIGRYSQAIEA----LPPDKYG-
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                            Indels 299;
                                                                                                                                                                                                                                                                                                                                    DB 1; Length 890;
                                                                                                                                                                                                                                                                                                                              1, 3 Score 310.5; DB 1; Similarity 20.2%; Pred. No. 2.9e-16; Dr. Conservative 150; Mismatches 307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----TO----
                                                                                                                                                                                                          NAME/KEY: Xaa = Any amino acid
LOCATION: 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QVLASSSANECISVKGRIYSILK-
INFORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS: LENGTH: 890 amino acids TYPE: amino acid TOPOLOGY: linear MOLECULE TYPE: protein
         ..
œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      483 LATP------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                192 PGLEN---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ------
                                                                                                                                                                                                                                         ;
US-08-472-934-8
                                                                                                                                                                                                                                                                                                                                                                                         191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   619
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       중 : 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
```

```
42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143
793 PEVI-----TRAKGEGHGR---AADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMG 843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----LHVFVPDSLAEEKK------IILQLL 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      89 ---QNESF--ARIQVRPAELKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLSEEEKKNLSASTVLTAQESFSGSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                204 GHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39 IMMMANNPEDWLSLLLKLEKNSVPLSDAL----LNKLIGRYSQAIEA----LPPDKYG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94 LLKSTGSFLESGLÓESCAELWTXADDNGAAD--ELRR-----SVIEIS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 890;
                                             736 HEIEFPDIPEK---DLQDVLKCCLKRDPKQRISIPELLAHPYVQIQT 779
                                                                           GENERAL TOTAL CONSTRUCTION:
APPLICANT: JOHNSON, GARY L.
APPLICANT: JOHNSON, GARY L.
TITLE OF INVENTION: METHOD AND PRODUCT FOR REGULATING CELL
TITLE OF INVENTION: RESPONSIVENESS TO EXTERNAL SIGNALS
MUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: SHERIDAN ROSS & MCINTOSH
STREET: 1700 LINCOLN STREET, SUITE 3500
CITY: DENVER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/323,460A
FILING DATE: 14-OCT-1994
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/049,254
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.1%; Score 310.5; DB 2 20.2%; Pred. No. 2.9e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: KOVARIK, JOSEPH E.
REGISTRATION NUMBER: 33,005
REFERENCALOCKET NUMBER: 2879-1-1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 303/863-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk COMPUTER: IBW PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Palace
                                                                                                                                                                    RESULT 2
US-08-323-460A-8
; Sequence 8, Application US/08323460A
; Parent No. 5854043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xaa = Any amino acid
116
```

```
144 KKSKOLLOKAVERGAVPLEMLEIALRNINLOKKOLLSEEEKKNLSASTVLTAQESFSGSL 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204 GHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLL 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----LHVFVPDSLAEEKK------IILQLL 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217 NAATGKDCSKDPDDVFMDAFLLITKHGDRARD-----SEDGWGTWEARAVKIVPQVETV 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----QNSHFKEPLVSDEKSSELIITDSITLKNKTESS--LLAK-LEET 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271 DTLRSMQVDNLLLVVMESAH----LVLQRKAFQQSIEGLMTVRHEQTSSQPIIAKGLQQL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------EYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQ 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----PKSI 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  386 VVRLMSGEPRQKIG--DKYITFAQKWMNYVLTKCESGRGTRPRWATQGFDFLQAIEPAFI 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             444 SALPE----DDFLSLQALMNECIGHVIGKPHSPVTAIHRNSPRPVKVPRCHSDPPNPHLI 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---QNESF--ARIQVRFAELKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34 LWVYFDYMRSWIQMLQQLPQASHSLKNLLEBEWNFTKEITHYIRGGBAQAGKLFCDIAGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135 RALKELFHEARERASKALGFAKMLRKDLEIAAEFVLSASARELLDA---LKAKQYVKVQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   435 CKTPSSNTLDDYMS-----CFRTPVVKNDFPPAC---QLSTPYGQPACFQQ--QQHQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NS---PDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39 IMMMANNPEDWLSLLLKLEKNSVPLSDAL----LNKLIGRYSQAIEA----LPPDKYG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94 LLKSTGSFLESGLOESCAELWTXADDNGAAD--ELRR-----SVIEIS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        393 I----PELARKVNTEOKHTTFEOPVFSV-----SKOSPPISTSKWFD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.1%; Score 310.5; DB 2; 20.2%; Pred. No. 2.9e-16; cive 150; Mismatches 307;
         APPLICATION NUMBER: US 08/354,516
FILING DATE: 21-FEB-1995
FRIOR APPLICATION DATA: 0.049,254
FRIOR APPLICATION DATA: 0.049,254
FRIOR APPLICATION DATA: 0.049,254
FILING DATE: 15-APR-193
FRIOR APPLICATION DATA: 0.08/323,460
FILING DATE: 14-OCT-1934
FRIOR APPLICATION DATA: PCT/US94/11690
FILING DATE: 14-OCT-1994
FRIOR APPLICATION DATA: PCT/US94/11690
FILING DATE: 15-APR-1994
ATTONNEY, AGENT INFORMATION: NAME: KARA, Catherine J. TELECOMUNICATION INPORMATION: SEQUENCE CHARACTERISTICS: SUPPORTED THE SECONDENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Xaa = Any amino acid
LOCATION: 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              192 PGLEN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            890 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356 K-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-461-146C-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S:
Matches 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                      271 DTLRSMQVDNLLLVVWESAH----LVLQRKAFQQSIEGLMTVRHEQTSSQPIIAKGLQQL 326
                                                                                                                                                                                                                                                                             434
                                                                                                                                                                                                                                                                                                                         443
                                                                                                                                                                                                                                                                                                                                                                        482
                                                                                                                                                                                                                                                                                                                                                                                                      444 SALPE----DDFLSLQALMNECIGHVIGKPHSPVTAIHRNSPRPVKVPRCHSDPPNPHLI 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RILISQI-KDSASKQGPIEAIQKSVRLFEERRYREMRRKNIIGQVCDIPKSYDNVMHVGL 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     679 IKH--PNLVRYFGVELHREEMYIFMEYCDEGTLEEVSRLGLQEHV----IRLYTKQITVA 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VHIIHQHGIVHSDLKPAN-FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMP 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPN 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PEVI-----TRAKGEGHGR---AADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMG 843
                                                                                                                                                                                 -- EYQEPEVPESNOKOWQAKRKSECINONPAASSNHWQ 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----QIGSGGSSKVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNK 561
NS---PDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSV-----
                                            ---SEDGWGTWEARAVKIVPQVETV
                                                                                                                                                                                                               386 VVRLMSGEFRQKIG--DKYITFAQKWMNYVLTKCESGRGTRPRWATQGFDFLQAIEPAFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                500 IPTPEGFRGSSVPENDRLASIAAELQFRSLSRHSSPTEERDEPAYPRSDSSGSTRRSWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LQQHSDKIIRLYDYEITDQYIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKMMLEA
                                                                                                                                                                                                                                                                             393 I----PELARKVNTEQKHTTFEQPVFSV-----SKQSPPISTSKWFD-----PKSI
                                                                                                                                                                                                                                                                                                                                                                      CKTPSSNTLDDYMS-----CFRTPVVKNDFPPAC---QLSTPYGQPACFQQ--QQHQI
                                                                                        -QNSHFKEPLVSDEKSSELIITDSITLKNKTESS--LLAK-LEET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-461-146C-8
; Sequence 8, Application US/08461146C
; Patent No. 298126S
GENERAL INFORMATION:
APPLICANT: JOHNSON, GARY L.
TITLE OF INVENTION: METHODS FOR REGULATING MEKK PROTEIN ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |: | | | | | : | | | | | HALSPEGRAFLSHCLESDPKIRWTASQLLDHAFVKVCT 887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HEIEFPDIPEK---DLQDVLKCCLKRDPKQRISIPELLAHPYVQIQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      217 NAATGKDCSKDPDDVFMDAFLLLTKHGDRARD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            491 QVLASSSANECISVKGRIYSILK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Lahive and Cockfield STREET: 60 State Street CITY: Boston STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lahive an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LATP----
                                                                                                                                                                                                                                                                                                                                                                           435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               944
                                                                                                                                                                                    356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      793
```

g

ò g à g d

ò

음

ò

g ò

ò

a ò g δ q $\dot{\delta}$

ò 셤

42;

263 191

```
---QNESF--ARIQVRFAELKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNV 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             444 SALPE----DDFLSLQALMNECIGHVIGKPHSPVTAIHRNSPRPVKVPRCHSDPPNPHLI 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    271 DTLRSMQVDNLLLVVMESAH----LVLQRKAFQQSIEGLMTVRHEQTSSQPITAKGLQQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -- EYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        386 VVRLMSGEFRQKIG--DKYITFAQKWMNYVLTKCESGRGTRPRWATQGFDFLQAIEPAFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34 LMVYFDYMRSWIQMLQQLPQASHSLKNLLEEEWNFTKEITHYIRGGEAQAGKLFCDIAGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLSEEEKKNLSASTVLTAQESFSGSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204 GHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----LHVFVPDSLAEEKK------IILOLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                217 NAATGKDCSKDPDDVFMDAFLLLTKHGDRARD-----SEDGWGTWEARAVKIVPQVETV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       562 LQQHSDKIIRLYDYEITDQYIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :: :: | : :: | : : | | | | :: | | :: | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | :: | | | | :: | | | | :: | | | | :: | | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | | :: | | :: | | | :: | | :: | | :: | | :: | | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | :: | | :: | :: | | :: | :: | | :: | | :: | :: | :: | | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              519 VHTIHQHGIVHSDLKPAN-FLIVDGMIKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         264 NS---PDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -QNSHFKEPLVSDEKSSELIITDSITLKNKTESS--LLAK-LEET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CKTPSSNTLDDYMS-----CFRTPVVKNDFPPAC---QLSTPYGQPACFQQ--QQHQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      500 IPTPEGFRGSSVPENDRLASIAAELQFRSLSRHSSPTEERDEPAYPRSDSSGSTRRSWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                560 RTLISQT-KDSASKQGPİEAİQKSVRLFBERRYREMRRKNIIGQVCDTPKSYDNVMHVGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -QIGSGGSSKVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               39 IMMMANNPEDWLSLLLKLEKNSVPLSDAL----LNKLIGRYSQAIBA----LPPDKYG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              393 I----PELARKVNTEQKHTTFEQPVFSV-----SKQSPPISTSKWFD-----PKSI
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 299;
                                                                                                                                                                                                                                                                                                                                                                     Length 890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LLKSTGSFLESGLQESCAELWTXADDNGAAD--ELRR-----SVIEIS--
                                                                                                                                                                                                                                                                                                                                                                tch 7.1%; Score 310.5; DB 3; sal Similarity 20.2%; Pred. No. 2.9e-16; 191; Conservative 150; Mismatches 307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              491 QVLASSSANECISVKGRIYSILK---------
                                                                                                                                                                                                                                                      Xaa = Any amino acid
116
TELEPHONE: (617) 227-7400
TELEFAX: (617) 227-5941
INFORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS:
LENGTH: 890 amino acids
TYPE: amino acids
                                                                                                                                                                                              MOLECULE TYPE: protein FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    192 PGLEN-----
                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356 K---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     483 LATP
                                                                                                                                                                                                                                                ; NAME/KEY:
; LOCATION:
US-08-461-145C-8
                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S:
Matches 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
     490
                                                                                                                                                                       618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  513
                                                                                                                                                                                                                            561
                                                                                                                                                                                                                                                                                                                                                                           VHTIHQHGIVHSDLKPAN-FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMP 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPN 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                793 PEVI----TRAKGEGHGR---AADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMG 843
                                                                                                                                                                                                                            -----QIGSGSSKVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNK
                                                                                                                                                                                                                                                                                519 RKVTFKWQRGNKIGEGQYGKVYTCISVDTGELMAMKEIRFQPNDHKTIKETADELKIFEG
                                                       500 IPTPEGFRGSSVPENDRLASIAAELQFRSLSRHSSPTEERDEPAYPRSDSSGSTRRSWEL
                                                                                                                                                                                                                                                                                                                                     562 LQQHSDKIIRLYDYBITDQYIYMVMB-C--GNIDLNSWLKKKKSIDPWBRKSYWKNMLBA
                                                                                                                                                                    560 RTLISQT-KDSASKQGPIEAIQKSVRLFEERRYREMRRKNIIGQVCDTPKSYDNVMHVGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        736 HEIEFPDIPEK---DLQDVLKCCLKRDPKQRISIPELLAHPYVQIQT 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: 5-JUNE-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: JOHNSON, GARY L.
TITLE OF INVENTION: NOVEL MEKK PROTEINS
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA.
APPLICATION NUMBER: US 08/049,254
FILING DATE: 11.APR-1993
PRIOR APPLICATION DATA.
APPLICATION NUMBER: US 08/323,460
PRIOR APPLICATION DATA.
APPLICATION NUMBER: PCT/US94/11690
PRIOR APPLICATION DATA.
APPLICATION NUMBER: PCT/US94/11690
PRIOR APPLICATION DATA.
APPLICATION NUMBER: PCT/US94/11690
PRIOR APPLICATION DATA.
APPLICATION NUMBER: PCT/US94/04178
PILING DATE: 15-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: P-41,106
REFERENCE/DOCKET NUMBER: CPI-004CN1
FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 15-APR-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/354,516
FILING DATE: 21-FEB-1995
ATTORNEY/AGENT INFORMATION:
        91--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3: Lahive and Cockfield,
60 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 8, Application US/08461145C; Patent No. 6074861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Kara, Catherine J.
REGISTRATION NUMBER: P-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 5-
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Lab
STREET: 60 Std
CITY: Boston
STATE: Massach
COUNTRY: U.S.A
        LATP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
US-08-461-145C-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                  491
                                                                                                                                                                                                                            514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                844
                                                                                                                                                        임
                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωp
                                                                                                         ò
                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                           P
P
                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
```

482

618

DD 386 VVRLMSGEFRQKIGDXYITFAQKWMNYVLTKCESGRGTRPRWATQGFDFLQAIEPAF1 4	435 CKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQI	CY	CY 514QIGSGGSSKVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNK 561 	Qy 562 LQQHSDKIIRLYDYBITDQYIYMVMB-CGNIDLNSWLKKKKKIDPWERKSYWRQMLBA 61 : : : : : : :	Qy 619 VHTIHQHGIVHSDLKPAN-FLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMP 675	Qy 676 PEAIXDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPN 735	Qy 736 HEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQT 779	RESULT 6 US-09-729-995-4 ; Sequence 4, Application US/09729995	al SD HUMAN KINASE PROTEINS, NUCLEIC	; TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN KINASE PROFEINS, AND USES; ITILE OF INVENTION: THEREOF; FILE REFERENCE: CLOO0904; FILE REFERENCE: CLOO0904; CURRENT APPLICATION NUMBER: US/09/729,995	CUCKENI FILING JATE: 2000-12-05 NUMBER OF SEQ ID NOS: 4 SOFTWARE: FACUSEQ for Windows Version 4.0 FEMALE: FACUSEQ FOR WINDOWS VERSION 5.00		Query Match 7.0%; Score 306; DB 4; Length 505; Best Local Similarity 25.1%; Pred. No. 2.9e-16; Matches 117; Conservative 73; Mismatches 155; Indels 122; Gaps 21.	QY 349 LAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTT 408	QY 409 FEQPVESVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTP 468 QY 60 FEQPVESVSKKFSLQERPAGSCLEAQVGPYSTGPASHMS 100	Qy 469 YGQFACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQ 52:	MICKTORADOR IN CONTRACT HARVAT FULL VIGINIA IN TURBURANDE
OY 676 PEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPN 735	HEIBFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVOIOT 779	RESULT 5 US-08-628-829-12 ; Sequence 12, Application US/08628829A ; Patent No. 6333170 ; GENERAL INFORMATION:	<pre>// APPLICANT: Johnson, Gary L. // IIILE OF INVENTION: Method and Product For Regulating Cell Responsiveness To External // FILE REPERBNCE: CPI-004DVCP3 // CURRENT APPLICATION NUMBER: US/08/628,829A</pre>	CURRENT FILING DATE: 1996-04-05 EARLIER PEDICATION NUMBER: 08/440,421 EARLIER FILING DATE: 1995-05-15 EARLIER APPLICATION NUMBER: 08/323,460	; EARLIER FILING DATE: 1994-10-14 ; EARLIER APPLICATION UMBER: 08/049,254 ; EARLIER FILING DATE: 1993-05-15 ; EARLIER APPLICATION NUMBER: 08/410,602	; EARLIER FILING DATE: 1995-04-24; EARLIER APPLICATION UNDER: 08/472,934; EARLIER FILING DATE: 1995-06-06; NUMBER OF SEQ ID NOS: 25	; SEQ ID NO 12 ; SEQ ID NO 12 ; TYPE: PRT ; ORGANISM: Mus musculus	; FEATURE: ; OTHER INFORMATION: At postion 116, Xaa = any amino ; OTHER INFORMATION: acid US-08-628-829-12	Query Match 7.1%; Score 310.5; DB 4; Length 890; Best Local Similarity 20.2%; Pred. No. 2.98-16; Matches 191; Conservative 150; Mismatches 307; Indels 299; Gaps 42;	QY 39 IMWYANNPEDWLSLLLKLEKNSVPLSDALLNKLIGRYSQAIEALPPDKYG-88	QY 89QNESFARIQVRFAELKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNV 143 DD 94 LLKSTGSFLESGLQESCAELWTXADDNGAADELRRSVIEIS 134	QY 144 KKSKQILQKAVERGAVPLEMLEIALRNIANLQKKQILSEEEKKNISASTVLTAQESFSGSL 203 :	QY 204 GHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLL 263	OY 264 NSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSV 314 DD 217 NAATGKDCSKDPDDVFMDAPLLLTKHGDRARDSEDGWGTWEARAVKIVPQVETV 270	OY 315ONSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAK-LEET 355 :::	QY 356 K	-PKST 43

ø

us-10-081-119-14.rai

```
314 PAFWAPEAISDTGQS-FSGKA-----LDVWATGVTLYCFVYGKCPF--IDEVILALHR 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1; Length 1247;
                                                                    731 IIDPNHEIEFPDIPE--KDLQDVLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                             364 KI-KNEAVVFPEEPEVSEELKDLILKMLDKNPETRIGVSDIKLHPWV 409
                                                                                                                                                                                                                                                                                            GARY L.
METHOD AND PRODUCT FOR REGULATING CELL
RESPONSIVENESS TO EXTERNAL SIGNALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATE:
FILING DATE: 06-JUN-1995
CLASSIFICATION 435
PRICE APPLICATION DATE:
APPLICATION NUMBER: US 08/440,421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6.9%; Score 303.5; DB 1;
22.2%; Pred. No. 1.7e-15;
iive 99; Mismatches 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Giulio A. Deconti, Jr. Esq.
REGISTRATION NUMBER: 31,503
REFERENCE/DOCKET NUMBER: CPI-004DVCP2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 227-7400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PILING DATE: 15-MAY-1995
PRICK APPLICATION NUMBER: 08/354,516
APPLICATION NUMBER: 08/354,516
FILING DATE: 21-FEB-1995
PRICK APPLICATION NUMBER: 08/354,516
APPLICATION NUMBER: 08/323,460
FILING DATE: 15-APL-1993
PRICK APPLICATION DATA:
APPLICATION NUMBER: 08/323,460
FILING DATE: 14-Oct-1994
PRICK APPLICATION NUMBER: PCT/US94/11690
FILING DATE: 14-OCT-1994
PRICK APPLICATION NUMBER: PCT/US94/11690
FILING DATE: 14-ACT-1994
APPLICATION NUMBER: PCT/US94/04178
FILING DATE: 15-APR-1994
APPLICATION NUMBER: 15-APR-1994
APPLICATION NUMBER: 15-APR-1994
APPLICATION NUMBER: 15-APR-1994
APPLICATION NUMBER: 15-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                   E: Lahive and Cockfield
60 State Street
                                                                                                                                                                                                          US-08-472-934-10; Sequence 10, Application US/08472934
sequence 10, Application US/08472934
setent No. 5753446; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1247 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (617) 227-5941
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                       TITLE OF INVENTION: MET
TITLE OF INVENTION: RESI
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lahive and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 22.29
Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-472-934-10
                                                                                                                                                                                       RESULT 8
                            g
                                                                      ò
                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: WEI, Ming-Hui et al.

TITLE OF INVENTION: ISOLATED HUMAN KINASE PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN KINASE PROTEINS, AND USES
TITLE OF INVENTION: THEREOF
FILE REFERENCE: CLOO0904DIV
CURRENT APPLICATION NUMBER: US/10/135,689
CURRENT FILING DATE: 2002-05-01
PRIOR PILING DATE: 2002-05-01
PRIOR PILING DATE: 2000-11-13
PRIOR FILING DATE: 2000-12-06
NUMBER: OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                               670
                                                                                                                                                                                         60 RPTPV-----RPSLSARKF----SLQERPAG-----SCLBAQVGPYSTGPASHMS-- 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KLQQ-HSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKK------KKSIDPWERKSY 611
                                                                                                                205 KLDHVNVVKLIEVLDDPAEDN-LYLVFDL-----LRKGPVMEVPCDKPFPEEQARLY 255
                                                                                                                                                                                                                                                    571 VNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHA 730
                                                                                                                                                                                                                                                                                              314 PAFMAPBAISDTGQS-FSGKA-----LDVWATGVTLYCFVYGKCPF--IDEYILALHR 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              349 LAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTT 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              469 YGQPACFQQ----QQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQ 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---PRAWRRPTIESHHV------AISDTEDCVQLNQ--YKLQSEIGKGAYGVVRL 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  526 VLNEKK-QIYAIKYVNLEEADNQ----------TLDSYRNEIAYLN 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              612 WKNMLEAVHTIHQHGIVHSDLKPANFLI-VDGMLKLIDFGIANQMQPDTTSVVKDSQVGT 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  571 VNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHA 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --ASNGVDPPPRARAASVIPGSAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109 FEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      256 LRDIILGLEYLHCOKIVHRDIKPSNILLLGDDGHVKIADFGVSNOFEGNDAQL--SSTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KLQQ-HSDKIIRLYDYEITDQYIYMYMECGNIDLNSWLKK------KKSIDPWERKSY
                                                                                                                                                               612 WKNMLEAVHTIHQHGIVHSDLKPANFLI-VDGMLKLIDFGIANQMQPDTTSVVKDSQVGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155; Indels 122;
                                                                                                                                                                                                                                                                                                                                                                     364 KI-KNEAVVPPEEPEVSEELKDLILKMLDKNPETRIGVSDIKLHPWV 409
                                                                                                                                                                                                                                                                                                                                           731 IIDPNHEIEFPDIPE--KOLQDVLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7.0%; Score 306; DB 4; Length 505; larity 25.1%; Pred. No. 2.9e-16; Conservative 73; Mismatches 155; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Application US/10135689
Patent No. 6670162
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25 VÁHLÉBAEÉGPÉP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              al Similarity
117; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-135-689-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-135-689-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S:
Matches 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                              g
                                                                                                                                                        ò
                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P
P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                        ò
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

23;

```
ð
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \stackrel{\circ}{\sigma}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---AADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMGHK---PPIPERLSPEGKAF 1216
                                                                                                                                                                                                                                                                                                                                                                                                     580
                                                                                                                   461
                                                                                                                                                                                                                                           521
                                                                                                                                                                                                                                                                                                        --------FKWORG------NKIGEGOKG 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 695 ISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV 751
-----ETKEYQEPEVPESN-----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN 401
                                                   SLSRHSSPTEERDEPAYPRSDSSGSTRRSWELR---TLISQTKDSASKQGPIEAIQKSVR
                                                                                                                   402 TEOKHTTFEOPVFSVSKOSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP
                                                                                                                                                                                                                                           ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS
                                                                                                                                                                                                                                                                                                                                                               KVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSK
                                                                                                                                                                          -----LFEERRYREMRRKNIIG------QVCDTPKS--YDNVMHVGLRKVT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   581 YIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPAN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WESOLA. 10
US-08-323-460A-10
US-08-323-460A-10
Sequence 10, Application US/08323460A
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 2854041
Fatent No. 28540541
Fatent No. 28540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:

APPLICATION NUMBER:

ELING DATE: 14-OCT-1994

CLASSIFICATION DATA:

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/049,254

FILING DATE: 14-APR-1993

ATTORNEY/AGENT INFORMATION:

RAME: KOVARIK, JOSEPH E.

REGISTRATION NUMBER: 33,005

REGISTRATION NUMBER: 33,005

REGISTRATION NUMBER: 33,005

REGISTRATION NUMBER: 2879-1-1

TELEPHONE: 33,839-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ||: ||| | : :|| | :|:: |
LSHCLESDPKIRWTASQLLDHAFVKVCT 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LKCCLKRDPKQRISIPELLAHPYVQIQT 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 303/863-0223
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 1247 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                               522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        752
                                                                                                                                                                          945
                                                                                                                                                                                                                                                                                                     980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1217
354
                                                      885
                                                                                                                                                                                                                                           462
                                                                                                                                                                                                                                                                                                                                                                                                                         995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
ò
                                                      g
                                                                                                                                                                       g
                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
```

```
353
                                                                                                                                                                                                                844 PG--PGGGDSVPAKPVNT-----APDTRGSSVPENDRL-----ASIAAELQFR 884
                                                                                                                                                                                                                                                                                             885 SLSRHSSPTEERDEPAYPRSDSSGSTRRSWELR---TLISQTKDSASKQGPIEAIQKSVR 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                      462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                637 FLIVDGMIKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSK 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            695 ISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV 751
                                                                                                                                                                                                                                                                                                                                                            402 TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP 461
                                                                                                                                                                                                                                                                                                                                                                                           942 -----LFEBRRYRBMRRKNIIG------QVCDTPKS--YDNVMHVGLRKVT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE--
                                                                                                                                                                                                                                                              354 -----ETKEYQEPEVPESN----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     581 YIYMVME-C--GNIDINSWIKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDIKPAN-
                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FOR REGULATING MEKK PROTEIN ACTIVITY
                                                                                                                  Indels 131;
                                                                    Length 1247;
                                                                    Query Match 6.9%; Score 303.5; DB 2; Best Local Similarity 22.2%; Pred. No. 1.7e-15; Matches 113; Conservative 99; Mismatches 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         752 LKCCLKRDPKORISIPELLAHPYVQIOT 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 10, Application US/08461146C
Patent No. 5981265
GENERAL INFORMATION:
TITLE OF INVENTION: METHODS FOR REGUINGEN OF SEQUENCES: 14
CORRESPONDENCE ADDRESS: ADDRESSEE: Lahive and Cockfield STREET: 60 State Street
CITY: Boston
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 05-UON-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/354,516
FILING DATE: 21-FBE-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/461,146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U.S.A.
ZIP: 02109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
MOLECULE TYPE: protein US-08-323-460A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-461-146C-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         980
```

```
COMPUTER READABLE FORM:
MEDILIM TYPE: Floppy disk
COMPUTER: IN PC compatible
COMPUTER: EN PC compatible
COMPUTER: The PC compatible
COMPUTER: The PC compatible
COMPUTER: The PC COMPUTER:
COMPUTER: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US 08/049,254
FILING DATE: 1-APR-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/049,254
FILING DATE: 14-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/323,460
FILING DATE: 14-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US94/11690
FILING DATE: 14-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US94/04178
FILING DATE: 15-APR-1995
FILING DATE: 15-APR-1995
FILING DATE: 15-APR-1995
FILING DATE: 15-APR-1995
ATTORNEY/AGENT INFORMATION:
AND DATE: 21-FEB-1995
ATTORNEY/AGENT INFORMATION:
TLE OF INVENTION: NOVEL MEKK PROTEINS
                NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEB: Lahive and Cockfield,
STREET: 60 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Kara, Catherine J.
REGISTRATION NUMBER: P-41,106
REPERENCE/DOCKET NUMBER: CPI-1
TELECOMMUNICATION INFORMATION:
TELEPAN: (617) 227-7400
TELEPAX: (617) 227-5941
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-41,106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1247 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , MOLECULE TYPE: protein US-08-461-145C-10
                                                                                                         CITY: Boston
STATE: Massachusetts
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 113; Conserval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                         02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             637 FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSK 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE-- 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               844 PG--PGGGDSVPAKPVNT-----APDTRGSSVPENDRL-----ASIAAELQFR 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354 -----ETKEYQEPEVPESN-----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        985 SLSRHSSPTEERDEPAYPRSDSSGSTRRSWELR---TLISQTKDSASKQGPIEAIQKSVR 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     402 TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             942 -----LFBERRYREMRRKNIIG------9VCDTPKS--YDNVMHVGLRKVT----- 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSIIKQIGSGGSS 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----NKIGEGOYG 994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              522 KVFQVLN-EKKQIYAIKYVNLEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQ 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        581 YIYMVWE-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPAN- 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   695 ISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels 131; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2; Length 1247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.9%; Score 303.5; DB 2;
22.2%; Pred. No. 1.7e-15;
live 99; Mismatches 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                752 LKCCLKRDPKQRISIPELLAHPYVQIQT 779
                FILING DATE: 15-APR-193

PRIOR APPLICATION DATA:

PRIOR DATE: 14-OCT-1934

PRIOR APPLICATION DATA:

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/US94/11690

FILING DATE: 14-OCT-1994

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/US94/04178

FILING DATE: 15-APR-1994

ATTORNEY/AGENT INFORMATION:

NAME: KARA, Catherine J.

REGISTRATION NUMBER: P41.106

REFERENCE/DOCKET NUMBER: CPI-004CN3

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELEFAX: (617) 227-5941

INFORMATION FOR SEQ ID NO: 10:

SEQUENCE CHARACTERISTICS:

LENGTH: 1247 amino acids
  US 08/049,254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      980 -------FKWQRG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 22.28
Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein US-08-461-146C-10
    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>2</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

23; 522 KYPQVLN-EKKOIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ 580 296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE-- 353 462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS 521 581 YIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNWLEAVHTIHQHGIVHSDLKPAN- 636 354 -----ETKEYQEPEVPESN----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN 401 402 TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP 461 |:| |-| | :: | :: | :: | :: | | | | :: | :: | :| | | | | :: | | | | | :: | | :: | | :: | | | | :: | | | | :: | 844 PG--PGGGDSVPAKPVNT------APDTRGSSVPENDRL------ASIAAELQFR 942 -----LPEERRYREMRRKNIİG------QVCDİPKS--YDNVMHVGLRKVT----6.9%; Score 303.5; DB 3; Length 1247; 22.2%; Pred. No. 1.7e-15; tive 99; Mismatches 165; Indels 131; Gaps 980 ------FKWORG----g ò

Sequence 10, Application US/08461145C Patent No. 6074861 GENERAL INFORMATION: APPLICANT: JOHNSON, GARY L.

RESULT 11 US-08-461-145C-10

us-10-081-119-14.rai

```
GENERAL INFORMATION:

APPLICANT: Johnson, Gary L.

APPLICANT: Johnson, Gary L.

TITLE OF INVENTION: Method And Product For Regulating Cell Responsiveness To Externa TITLE OF INVENTION: WINDER: US/08/628,829A

CURRENT APPLICATION NUMBER: 08/440,421

EARLIER PELING DATE: 1996-04-05

EARLIER FILING DATE: 1995-05-15

EARLIER PLING DATE: 1995-05-15

EARLIER APPLICATION NUMBER: 08/440,234

EARLIER APPLICATION NUMBER: 08/49,254

EARLIER APPLICATION NUMBER: 08/410,602

EARLIER PELING DATE: 1993-05-15

EARLIER PELING DATE: 1995-04-24

EARLIER FILING DATE: 1995-04-24

EARLIER FILING DATE: 1995-06-06

MUMBER: 08/472,934

EARLIER FILING DATE: 1995-06-06

MUMBER: 08/472,934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1514 ---AADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMGHK---PPIPERLSPEGKAF 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----NKIGEGOYG 1344
  ---AADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMCHK---PPIPERLSPEGKAF 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1194 PG--PGGGDSVPAKPVNT-----APDTRGSSVPENDRL-----ASIAAELQFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1292 -----LPEERRYREMRRKNIHG-----QVCDTPKS--YDNVMHVGLRKVT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     522 KVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            354 -----ETKEYQEPEVPESN-----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                402 TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      581 YIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNWLEAVHTIHQHGIVHSDLKPAN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        637 FLIVDGMLKLIDFGIANOMOPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
6.9%; Score 303.5; DB 4;
Best Local Similarity 22.2%; Pred. No. 2.5e-15;
Matches 113; Conservative 99; Mismatches 165;
                                                                                     LSHCLESDPKIRWTASQLLDHAFVKVCT 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 752 LKCCLKRDPKQRISIPELLAHPYVQIQT 779
                                               752 LKCCLKRDPKQRISIPELLAHPYVQIQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1330 ------PKWQRG-----
                                                                                                                                                                                         Sequence 14, Application US/08628829A Patent No. 6333170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Mus musculus
US-08-628-829-14
      1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: P
SEQ ID NO 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
: | | | | : | | | : : | | : : | | : : | | | HI | | 108

EMYIFMEYCDEGTLEEVGRLGLQEHV----IRLYTKQITVAINVLHEHGIVHRDIKGANI 1108
                                                                                            ---AADIWSLGCVVIEMVTGKRPWHEYEHNPQIMYK-VGMGHK---PPIPERLSPEGKAF 1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1235 SLSRHSSPTEËRDEPAYPRSDSSGSTRRSWELR---TLISQTKDSASKQGPIEAIQKSVR 1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1330 ------NKIGEGYG 1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    461
                                                                                                                                                  695 ISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV 751
                                                                 FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----ETKEYQEPEVPESN-----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FLIVDGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPBAIKDMSSSRENGKSKSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               402 TEQXHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----PEERRYREMRRKNIIG------QVCDTPKS--YDNVMHVGLRKVT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPAN-
                                                                                                                                                                                                                                                                                                                                                                                                                                           JOHNSTAN INFORMATION:
JUNEARY INFORMATION
JILLS OF INVENTION: HUMAN MEKK PROTEIN AND NUCLEIC ACID MOLECULES
JITLE OF INVENTION: HUMAN MEKK PROTEIN AND NUCLEIC ACID MOLECULES
JITLE OF INVENTION: AND USES THEREFOR
JULE REFERENCE: CPI-085CPPC
CURRENT APPLICATION NUMBER: US/09/423,890
CURRENT APPLICATION NUMBER: US/06/078,153
PRIOR FILING DATE: 1998-03-16
PRIOR FILING DATE: 1998-03-16
PRIOR FILING DATE: 1998-09-04
NUMBER OF SEQ ID NOS: 38
SOFTWARE: PATENTIN VEY: 2.0
SOFTWARE: PATENTIN VEY: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.9%; Score 303.5; DB 4; 22.2%; Pred. No. 2.5e-15; tive 99; Mismatches 165;
                                                                                                                                                                                                                                                               752 LKCCLKRDPKQRISIPELLAHPYVQIQT 779
                                                                                                                                                                                                                                                                                                                                                              US-09-423-890-13
; Sequence 13, Application US/09423890
Settence 13, Application US/09423890
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best_Local Similarity 22.2*
Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
CRGANISM: Mus musculus
US-09-423-890-13
                        1053
                                                                                                       1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1459
                                                                 637
                                                                                                                                                                                           1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                    Dp
                                                                                                       g
                                                                                                                                                  ò
                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                 ठे
                                                                                                                                                                                                                                                                        Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
completed: September 29, 2004, 16:17:26
ne : 39 secs
                                                   Query Match
Best Local S
Matches 92
                                                                                                                                                                                                                                                                                                                                                       639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search con
Job time :
                                                                                                                                                             g
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                          엄청
                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/10135689;
Patent No. 6670162
| Patent No. 6670162
| Genbral. Invormation:
| APPLICANT: Wal, Ming-Hui et al. |
| APPLICANT: Wal, Ming-Hui et al. |
| TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN KINASE PROTEINS, AND USES;
| TITLE OF INVENTION: THEREOF;
| TITLE OF INVENTION: THEREOF;
| FILE REPERBANCE: CLOO0904A1V |
| CURRENT APPLICATION NUMBER: US/10/135,689 |
| CURRENT APPLICATION NUMBER: 097020,995 |
| PRIOR APPLICATION NUMBER: 09747,031 |
| PRIOR FILING DATE: 2000-11-13 |
| PRIOR FILING DATE: 2000-12-06 |
| NUMBER OF SEQ ID NOS: 4 |
| SOFTWARE: FastERQ for Mindows Version 4.0 |
| SEQ ID NO 2 |
| TYPE: PRI
                                                                              Sequence 2, Application US/09729995

Patent No. 6436206

REBERALI INFORMATION:
APPLICANT: WET, Ming-Hui et al
TITLE OF INVENTION: ISOLATED HUMAN KINASE PROTEINS, NUCLEIC
TITLE OF INVENTION: THEREOF MOLECULES ENCODING HUMAN KINASE PROTEINS, AND USES
TITLE OF INVENTION: THEREOF MOLECULES ENCODING HUMAN KINASE PROTEINS, AND USES
TITLE OF INVENTION: THEREOF MOLECULES ENCODING HUMAN KINASE PROTEINS, AND USES
CURRENT APPLICATION UNMBER: US/09/729,995
CURRENT FILING DATE: 2000-12-06
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               548 ------TLDSYRNEIAYLNKLQQ-HSDKIIRLYDYEITDQYIYMVM 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      639 I-VDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPFAIKDMSSSRENGKSKSKISP 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       698 KSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIFF--KDLQDVLKCC 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       493 LASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKK-QIYAIKYVNLEEADNQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ECGNIDLNSWLKK-----KKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LGDDGHVKIADFGVSNQFEGNDAQL--SSTAGTPAFMAPEAISD-SGQSFSGKA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61;
                                                                                                                                                                                                                                                                                                                                                                                                                            6.8%; Score 298.5; DB 4; Length 5
28.8%; Pred. No. 1.2e-15;
tive 58; Mismatches 109; Indels
1567 LSHCLESDPKIRWTASQLLDHAFVKVCT 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ::|: || :|:
LDKNPETRIGVPDIKLHPWV 409
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 6.8%
Best Local Similarity 28.8%
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Human
                                                   RESULT 14
US-09-729-995-2
                                                                                                                                                                                                                                                                                                                                                                               ; OKGANISM: HI
US-09-729-995-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-135-689-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               756
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           상 점
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

```
587 ECGNIDLNSWLKK-----KKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFL 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------TLDSYRNEIAYLNKLQQ-HSDKIIRLYDYEITDQYIYMVM
                                                                                                                                                                                                                                    I-VDGMLKLIDFGIANOMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISP
                                                                                                                                                                                                                                                                                                                                                                                          698 KSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPE--KDLQDVLKCC
                                                                                                                                 493 LASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKK-QIYAIKYVNLEEADNQ----
                                                                                             Gaps
                                                                                          61;
                                                        Length 505;
                                                    6.8%; Score 298.5; DB 4; Length 38.8%; Pred. No. 1.2e-15;
tive 58; Mismatches 109; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   756 LKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LDKNPETRIGVPDIKLHPWV 409
                                                                                             Conservative
; ORGANISM: Homo sapiens
US-10-135-689-2
                                                                    Local Similarity
es 92; Conserva
```

با

```
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
```

OM protein - protein search, using sw model

September 29, 2004, 16:11:35; Search time 46 Seconds (without alignments) 1758.632 Million cell updates/sec Run on:

US-10-081-119-14 4376 1 MNKVRDIKWKFKNEDLTDEL......GGESHNSSSSKTFEKKRGKK 841

Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283366 seqs, 96191526 residues Searched:

283366 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR_78:*
1: pirl:*
2: pir2:*
3: pir3:*
4: pir4:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

n	Description	kina	in kinase		checkpo	ical pr	ro.	ical pr	inas	probable carbon ca	Ca2+/calmodulin-de	MAP kinase kinase	hypothetical prote	calcium/calmodulin	protein C07A9.3 [i	hypothetical prote	MAP kinase kinase	u	protein kinase BCK	SNF1-related prote	+	hypothetical prote	hypothetical prote	ry prote		protei		E E	
SUPPLEATE		A42861	B44439	A44439	T43539	A96807	867561	F90132	558882	T41587	JC5669	T03022	T25433	JE0191	H88562	S40704	T39225	A57156	S20117	862365	T37317	F96538	S48944	250	572	S51899	506	305	2111
	DB	. 21	7	0	N	7	٦	7	8	7	7	7	7										Ŋ	α	71	N	N	N	•
	engt	857	830	856	678	720	764	536	460	576	587	1607	1016	417	1004	1044	1401	505	1478	746	357	1097	1080	515	631	1081	14	33	
æ	ery	100.0	72.	N		14.7	ω.	o. 6.											6.8				•			6.7		6.7	
	COL	4376	182.	•	673	4	9	34.	326	324.5	321	318.5	317	316.5	309	7	04	300	299	297	96	296.5	295	94	94	94	294.5	93	
	Result No.		7	m	4	w	φ	7	œ	o,	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	c

hypothetical prote	P21 activated kina	calcium-dependent	serine/threonine-p	protein kinase C (myosin-light-chain	probable calcium-d	hypothetical prote	hypothetical prote	calcium-dependent	beta-p21-activated	hypothetical prote	calcium-dependent	phosphorylase kina	protein kinase kin	- Lagenty Linasa 1 -
C86160	I49376	A49082	T47988	S35362	S68235	H84810	T20941	T33998	T05476	A57597	T15467	T02784	851600	T40503	00000
N	N	Н	N	Н	Н	~	N	~	7	7	7	H	N	7	c
			m	œ	9	ო	_	9	4	4	2	σ,	09	16	0
519	544	610	648	86	190	583	88	72	55	54	62	9	Ñ	œ	٠
													6.4 5		
9.9		9.9	9.9	9.9 /	6.5		6.5	6.4	6.4	6.4	6.4	6.4	6.4		,

ALIGNMENTS

C.;

61 VPLSDALLNKLIGRYSQAIBALPPDKYGQNESFARIQVRFABLKAIQEPDDARDYFQNAR 120

Keywords: phosphotransferase 496-764/Domain: protein kinase homology <kin> Query Match 72.7%; Score 3182.5; DB 2; Length 830; Query Match 74.0%; Pred: No. 4.46-122; Matches 622; Conservative 87; Mismatches 105; Indels 27; Gaps Matches 622; Conservative 87; Mismatches 105; Indels 27; Gaps 1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDMLSLLIKLEKNS 1 MONITORIAN MINITALIAN kin>		Qy 121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 180 133 ENCKKFAFVHVSFAQFELSQGNVKKSEQLLQKAVFLQMLEIARRNLHLQKKQLLP 192 Qy 181 EBEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240 193 EEDKKSVSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240 193 EEDKKSVSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240 193 EEDKKSVSASTVLTAQESFSGSLGHVQNRNNSCDSRGQATKARFLYGENMPPQDAEIGYR 252	241 NSIRQTNKTKQSCPFGRVPVNLINSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 3 1		358 FEIRESKRYMONGSIKKFECOTGNEARIRFLANDVENDIFALD-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	481 OILATPLONLQVLASSSANECISVKGRIYSILKOIGSGGSSKVFQVLNEKKOIYATVYV - - - - - - - - - - - -	541 LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK	Qy 601 KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANPLIVDGMLKLIDFGIANQMQPDTT 660 : 	Qy 661 SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKKISPKSDVWSLGCILYYMTYGKTPFQQ 720	Oy 721 IINQISKLHAIIDPNHEIEFPDIPEKOLODVIKCCLKRDPKQRISIPELLAHPYVOICTH 780
DD 77 VPLSDALLNKLIGRYSGAIEALPPDKYGQNESFARIOVRFAELKAIOEPDDARDYFGMAR 136 OY 121 ANCKKPAFVHISFAOFELSGGNVKKSKQLLGKAVERGAVPLEMLEIALRNINLOKKOLLS 180	NALLNSPDCDVKTDDSVVPCFMKRQI 	317 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEFTKEYQE 361 PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVPSVSKQS [PPISTSKWPDFKSICKTPSSNTLDDYMSCFRTPVVKNDPPPACQLSTPYGQPACFQQQQH	97 QILAIPEQNEASSSANECISYRGEISTESLEGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	OY 601 KSIDPWERKSYWKUNLEAVHTHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT 660	661 SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVMSLGC 	721 IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 78	781 PV 797 PV	Oy 841 K 841 Db ' 857 K 857	RESULT 2 B44439 Dyotein kinase (EC 2.7.1) esk splice form 2 - mouse NyAlternate names: probable serine/threonine/tyrosine protein kinase NyAlternate names: probable serine/threonine/tyrosine protein kinase C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Accession: B44439 R;Douville, E.M.; Afar, D.E.; Howell, B.W.; Letwin, K.; Tannock, L.; Ben-David, Y.; Paws Mol. Cell. Biol. 12, 2681-2689, 1992 MyTitle: Multiple cDNAs encoding the esk kinase predict transmembrane and intracellular A;Reference number: A44439; MulD:92269841; PMID:137525 A;Accession: B44439 A;Accession: B44439 A;Molecule type: mRNA A;Residues: 1-830 cDOU> A;Residues: 1-830 cDOU> A;Residues: sequence extracted from NCBI backbone (NCBIN:103064, NCBIP:103066) C;Superfamily: protein kinase homology

```
spindle checkpoint protein kinase Mps1 homolog (imported) - fission yeast (Schizosaccha gindle checkpoint protein kinase Mps1 homolog (imported) - fission yeast (Schizosaccha C; Species: Schizosaccharomyces pombe
C; Date: 21-Jan-2000 #sequence revision 21-Jan-2000 #text_change 03-Nov-2000
C; Date: 21-Jan-2000 #sequence revision 21-Jan-2000 #text_change 03-Nov-2000
C; Date: 21-Jan-2000 #sequence revision 23-Se
R; He, X.; Sazer, S.
R; He, X.; Sazer, S.
R; Rision: A fission yeast spindle checkpoint component that is homologous to buddi
A; Reference number: 22258
A; Rocession: A fission yeast spindle checkpoint component that is homologous to buddi
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEX>
A; Residues: 1-678 cHEXPE: AL133352; PIDN:CAB62431.1; GSPDB:GN00067; SPDB:SPBC243.01
A; Residues: 1-678 cHEXPE: DAIA
A; Residues: 1-678 cHEXPE: DAIA Library, August 1999
A; Reference number: 221840
A; Reference number: 221840
A; Recidues: 1-678 cHEXPE: DAIA
A; Residues: 1-678 cHEXPE: DAIA
A; Residues: 1-678 cHEXPE: DAIA
A; Reference number: 221840
A; Recidues: 1909
A; Reference number: 221840
A; Recidues: 1-678 cHEXPE: DAIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
A;Residues: 586-678 a.LN>
A;Cross-references: EMBL:AL110295; PIDN:CAB53717.1; GSPDB:GN00067; SPDB:SPBC106.01
A;Experimental source: strain 972h-; cosmid c106
                                  830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TESSLLAKLEETKEYQEPE-VPESNQK-----QWQAKRKSECINQNPAASSNHWQIPELA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R-----KWNTEQKHTTFEQPVFSVSKQSPPISTS---KWFDPKSICKTPSSNTLDDYM 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PSFHPSQFESSFSPRVQFDHDVERRASELHSRPVTVFQEPQRSASQPYESHALSPKVAPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---LATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLN-EKKQIYAIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293 LVV--PGSK-----PSGNDSCELR--NLKSVQNSHFKEPLVSDEKSSELIITDSITLKNK
  LVRNPKERISIPELLTHPYVQIQPHPGSQMARGATDEMKYVLGQLVGLNSPNSILKTAKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            233 QDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----HSDGTVTGDTLRROSSGATALE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               122 SEVSLSAGVNDLNSNSEHDLLPKSVNKTPGSLSISRRRRIGRIGLGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCFRIPVVKNDFPPACQL-----STPYGQP-ACFQQQQ-
                                                                                                                                         856
                                                                                                                        LYERYNCGEGODSSSKTFDKKRERK
                                                                                      LYEHYSGGESHNSSSSKTFEKKRGKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ODPELYFKN---DTFSSKSS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 30.9%; Pri
Matches 195; Conservative 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Map position: 3
C;Genetics: <WOO1>
A;Gene: SPDB:SPBC243.01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A,Map position: 2
C,Genetics: <LYN1>
A,Gene: SPDB:SPBC106.01
A,Map position: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <HEX1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  483
                                                                                                                                            831
                                     771
                                                                                        816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                     9
                                                                                      ò
                                                                                                                                      엄
                                                                  Y.; Paws
                                                                                                                  transmembrane and intracellular
                                                                                                                                                                                                                                                                                                                                                                 kinase
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 05-Nov-1999 C;Accession: A44439; S27865 St. Afar. D.E.; Howell, B.W.; Letwin, K.; Tannock, L.; Ben-David, Mol. Cell. Biol. 12, 2661-2669, 1992 A;Title: Multiple cDNAs encoding the esk kinase predict transmembrane and intrace A;Title: Multiple cDNAs encoding the esk kinase predict transmembrane and intrace A;Mcession: A44439 MUID:92269841; PMID:1375325 A;Residues: A44439 MUID:92269841; PMID:1375325 A;Residues: L-856 cD0U1-A;Residues: RMBL:MRS-A;Residues: L-856 cD0U1-A;Residues: L-856 cD0U1-A;Residues: L-856 cD0U1-A;Residues: RMBL:MS-A;Residues: RMB-A;Residues: RMB-A;Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EITEQYIYWVMECGNIDLNSWLKKKKSINPWERKSYWKWMLEAVHIHQHGIVHSDLKPA 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               253 NPFKQTHAAKRSCPFGRVPVNLLNSPDFYVKTDSSAVTQLTTRLALSSVPLPYVTCLLHL 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQIPE 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LKRDPKQRISIPELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKT 815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPINDDLINKLIGRYSQAIEVLPPDKYGQNESFARIQVRLAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSV---------VPCFMKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q-----TSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QLLALAGLAKGSGPDRDAILPGSRPRGSDSYELRGLKPIQTIYLKDSLVSNSKSSEL-MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KNDPPPACPSTPYSQLARLQQQQQGLSTPLQSLQISGSSSINECISVNGRIYSILKQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSGGSSKVFQVLNEKKQINAIKYVNLEDADSQTIESYRNEIAFLNKLQQHSDKIIRLYDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EITDQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NFLIVDGMLKLIDFGIANOMOPDTTSVVKDSQVGTVNYMPPBAIKDMSSSRENGKSKSKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EEEKKNISASTVI.TAQES FSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LARKVNTEQXHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KNDFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MNKVRDIKNKFKNEDLIDELSLNKISADTIDNSGTVNQIMMANNPEDWLSLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 856;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 72.3%; Score 3165.5; DB 2; Best Local Similarity 71.8%; Pred. No. 2.2e-121; Matches 622; Conservative 86; Mismatches 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음 장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \overset{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
A;Accession: S07561
A;Accession: S07561
A;Accession: S07561
A;Accession: S07561
A;Accession: S07561
A;Accession: S07561
A;Accession: S07561
A;Accession: S07561
A;Experimental source: strain S288C
A;Experimental source: strain S288C
R;Poch, O.; Schwob, E.; de Fraipont, F.; Camasses, A.; Bordonne, R.; Martin, R.P.
Mol. Gen. Genet. 243, 641-653, 1994
A;Title: RPK1, an essential yeast protein kinase involved in the regulation of the onset A;Reference number: S46425, MUID: 94301294; PMID: 8028580
A;Accession: S46425
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1.145, %1, 147-210, 'TKR', 214-764 <POC>
A;Accession: S6625
A;Cross-references: GB:L08909; NID: 91197057; PIDN: AAA88731.1; PID: 91197058
R;Lauze, E.; Stoelcker, B.; Luca, F.C.; Weiss, E.; Schutz, A.R.; Winey, M. EMBO J. 14, 1655-1663, 1995
A;Title: Yeast spindle pole body duplication gene MPSI encodes an essential dual specifical A;Accession: S55256
A;Accession: S55256
A;Accession: S55256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     profession kinase RPK1 (BC 2.7.1.-) - yeast (Saccharomyces cerevisiae)
N:Alternate names: protein D2785; protein YDL028c; spindle pole body duplication protein
N:Alternate names: protein D2785; protein YDL028c; spindle pole body duplication protein
C;Speciess cerevisiae
C;Date: 10-Sep-1999 #sequence revision 10-Sep-1999 #text_change 16-Jun-2000
C;Accession: $67561; $46425; $55256
C;Accession: $67561; Af425; $55256
SyPaulin, L.; Saren, A.M.; Laamanen, P.
Submitted to the Protein Sequence Database, July 1996
A;Reference number: $67560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: nucleic acid sequence not shown; not compared with conceptual translation A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 446-491, IERP', 497-715 <LAU>
                                                                     | : : : : | SCC----PSSKVSNILHPNKDATASEMPASTN---DPEVRVKETDTSKQQQITTGLEAP 279
                                  453
                                                                                                                                                                                                                                                                                       330 YDPDLFFKVNGKLYQRLGKIGSGGSSEVHKVISSDCTIYALKKIKLKGRDYATAYGFCQE 389
                                                                                                                                                                                                                                                                                                                                                                                               645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           449 AHMLSQKWREIEGSDRTIDENWLRFYWQQILQAVNTIHEERIVHSDLKPANFLLVRGFLK 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRIS 765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PELARKVNTEOKHTTFEOPVFSVSKOSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTP
                                                                                                                                                                                                                                                     502 ----ISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       594 NSWLKKK-----KSIDDWERKSYWKNMLEAVHTHQHGIVHSDLKPANFLIVDGMLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  454 VVKNDFPPACQLSTPYGOP----ACFQQQQHQILATPLQNL---QVLASSSANEC----
                                                                                                                                                                                              ----SIYGSDGQANARLPEELHTSVSSQPQKSDKHEKVASSKGPSAPRKRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A,Map position: 4L
C,Superfamily: yeat protein kinase RPK1; protein kinase homology
C,Keywords: phosphotransferase
F,438-716/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A, Cross-references: SGD:S0002186; MIPS:YDL028c
                                                                                                                                                                                                                                                                                                                                                               IAYLNKLOQHSDKIIRLYDYEITDO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Gene: SGD: MPS1; RPK1; MIPS: YDL028c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ||||| ||:
627 IPELLQHPFL 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 992
                                                                                                                                                                                                 280
                                                                                                                                                                                                                                                                                                                                                               556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       904
                                                                     Dp
                                                                                                                                    ò
                                                                                                                                                                                  d
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
A96807
hypothetical protein T32E8.5 [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-aar cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: A56807
C;Accession: A56807
C;Air C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Huples, B.; Huizar, L.
Nature 408, B16-820, 2000
A;Authors: Hunter, J.I.; Yi Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Markin, E.; Kim, C.C.A.; Li, J.H.; Li, Y.Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, A;Reference number: A86141; MUID:21016719; PMID:11130712
A;Residues: L.720 <a href="https://doi.org/10.106719">https://doi.org/10.106719</a>; PMID:11130712
A;Residues: L.720 <a href="https://doi.org/10.106719">https://doi.org/10.106719</a>; PIDN:AAF08564.1; GSPDB:GN00141
FDNSQATPIPKRQ-----QDVVTVANLQPIKLGVVGKGGSSMVYRIFSPDNSRLYALK 345
                                                                                                                                                                                                                           713
                                                                                                                                                                                                                                                                                                                                                             524
                                                                                                                                                                                                                                                                                                                                                                                                              GKTPFQQIINQISKLHAIIDPNHEIEFPD-----IPEK-----DLQDVLKCC 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           161 LEMLETALRNINLOKKOLLSEEEKKNISASTVITAQE----SFSGSLGHLONRNNSC-D 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VTSLE---SNLDVQRK-----SQSLIGTSQDMEWDATNQAEASHL----DACIG 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNK-TKQSCPFGRVPVNLLNSPDCDVKTD 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191 HSSAPMLNAT-----THVSRSYVEAD------SNANPHAVQSQGNL 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --SAVGSSWATTTLI 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89
                                                                             YVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ--YIYMVMECGNIDLNS
                                                                                                                                 346 EVNFINADOTTIQGYKNEIALIRKI-SGNDRIIKLYAAEVNDTLGQLNMVMECGETDLAN
                                                                                                                                                                                           596 WLKK--KKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIAN
                                                                                                                                                                                                                                                                                                   654 QMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTY
                                                                                                                                                                                                                                                                                                                                      525 GRAPFAH-LKMIQALAAIPNEQYHIHFPEVALPANAVQEKEGSLPGVTVGPDLMDVMKRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107 QEPDDARDYFQMARAN-----CKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QRSQDVVTLSQSLAANTLTQDTTNNLAITSVAGESASITQPTVSEHFNPSDRQMDFGKSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      334 ITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99; Mismatches 242; Indels 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----NLPSVDSEVSLKSEYKDSSSLAKIQGQLGEFF-NFLNQP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14.7%; Score 643; DB 2; Length 720; 28.1%; Pred. No. 2.9e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |:|| ::|::|||| ||::
|LERDQRKRLTIPELLVHPFLNPLPSYLTPLAK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LKRDPKQRISIPELLAHPYVQIQTHPVNQMAK 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SKHO-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A, Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 205;
                                                                                538
                                                                                                                                                                                                                                                                                                                                                                                                              714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174
                                                                                                                            CC
                                                                                                                                                                                     ò
                                                                                                                                                                                                                                 Op
                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

Genome: nucleomorph Keywords: nucleomorph Query Match 9.9%; Score 434.5; DB 2; Length 536; Query Match Best Local Similarity 33.9%; Pred. No. 5.8e-11; Matches 98; Conservative 69; Mismatches 101; Indels 21; Gaps A07 CANFOLDING VETTROLIGATION NEWFOLTWAITER DANGELING AND AND AND AND AND AND AND AND AND AND	EEADNOTIDESY-KNE : : : : NONNKNFCLKE KKKSIDPWERKSYWK	SFGKENL SMLKLID KSLKIID	Qy 669 GTWNYMPPEAIKDMSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKL 728 :: : :: :: ::	1a1	A;Title: A kinase from fission yeast responsible for blocking mitosis in S phase A,Reference number: S5882; MUID:95240713; PMID:7723827 A,Reference number: S58882 A,Status: preliminary; nucleic acid sequence not shown A,Molecule type: mRNA A,Residues: 1-460 < MURI> A,Cross-references: EMBL:X85040; NID:9794146 R;Murakami, H.	Submarted to Case EMBL Data Library, March 1995 A;Reference number: \$71846 A;Accession: 571846 A;Accession: 571846 A;Accession: 571846 A;Residues: 1-60,'G','62-202,'I',204-460 <mur2> A;Cross-references: EMBL:X85040; NID:g794146; PIDN:CAA59410.1; PID:g794147 R;Wood, V, Rajandream, M.A.; Barrell, B.G.; Jimenez Martinez, J. submitted to the EMBL Data Library, July 1999</mur2>	Afactesion: Translated from GB/EMBL/DDBJ Afactesion: Ltranslated from GB/EMBL/DDBJ A;Status: translated from GB/EMBL/DDBJ A;Residues: 1-202,'1', 204-237,'F',239-460. A;Residues: 1-202,'1', 204-237,'F',239-460. A;Cross-references: EMBL:Ail09736; NID:95701956; PIDN:CAB52158.1; PID:95701966; GA:Experimental source: strain 972h(-); cosmid c18B5 A;Experimental source: strain 972h(-); cosmid c18B5 B;Lindsay, H.D.; Garifiths, D.J.F.; Edwards, R.J.; Christensen, P.U.; Murray, J.I Genes Dev. 12, 382-395, 1998 A;Title: S-phase specific activation of Cds1 kinase defines a subpathway of the A;Reference number: Z26084; MUID:98119835; PMID:9450932 A;Reference number: Z26084; MUID:98119835; PMID:9450932 A;Reterence number: DAA A;Residues: DAA A;Residues: 1-202,'1', 204-237,'F', 239-460 cLIN> A;Residues: 1-202,'1', 204-237,'F', 239-460 cLIN> A;Cross-references: EMBL:AJ222869; NID:92689196; PIDN:CAA11019.1; PID:92689197 C;Genetics: A;Gene: SPEC18B5.11c; cds1 A;Map position: 3 A;Introns: 86/3; 103/1; 113/3; 142/1; 228/3; 298/3; 368/2 C;Function:
Gaps CDSRGQT 2	40 LLSHIEK- 220 TKARFLYG : 97 LFGRYLRN	QY 246TNKTKQSCPFGRVPVNLLNSPDCDVKTDDSV-VPCFMKRQTSRSECRDLVV 295	Db 214NTDYBSIDFGDINPIQYIKKHNLPTSDLPISQYFDKQREENRQAALRKHSSR 267 Qy 331 ELIITDSITLKMKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNH 390 L : : : : : : : : : : : : : : : : : : : :	PACQLSTPYGQPACFQQQQHQI-LATPLQNL 490	OY 551 SYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWER 608 ::	Oy 669 GTVNYMPPEAIKDMSSSRENGKSKKISPKSDVWSLGCILYYMTYGKTPFQQIINQ 724	RESULT 7 F90132 hypothetical protein kin(mps1) [imported] - Guillardia theta nucleomorph C;Species: nucleomorph Guillardia theta C;Species: nucleomorph Guillardia theta A;Note: a nucleomorph is the vestigial nucleus of a eukaryotic endosymbiont C;Accession: F90132 R;Douglas, S.; Zauner, S.; Fraunholz, M.; Beaton, M.; Penny, S.; Deng, L.T.; Wu, X.; Rei Nature 10, 1091-1096, 2001 A;Title 110, 1091-1096, 2001 A;Title 110, 1091-1096, 2001 A;Title 110, 1091-1096, 2001 A;Status: preliminary A;Status: preliminary A;Status: preliminary A;Residues: 1-536 <dou> A;Cross-references: GB:AF083031; NID:g13794373; PIDN:AAK39750.1; GSPDB:GN00152 C;Genetics: A;Genetics: A;Genetics: A;Map position: 3</dou>

```
ission yeast (Schizosaccharomyces pombe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIDN:CAB52158.1, PID:g5701966; GSPDB:G
8B5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nase defines a subpathway of the checkpo
9450932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .; Christensen, P.U.; Murray, J.M.; Osm
                                                                                                                                                        for blocking mitosis in S phase.
7723827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A.Status: preliminary; translated from GB/EMBL/DDBJ
A,Rolecule type: DNA
A,Rosidues: 1-202,'I',204-237,'F',239-460 <LIN>
A,Residues: 1-202,'I',204-237,'F',239-460 <LIN>
A,Construction: EMBL:AJ222869; NID:g2689196; FIDN:CAA11019.1; PID:g2689197
C,Genetics: A,Gene: SPBC18B5.11c; cds1
A,Map position: 3
A,Introns: 86/3; 103/1; 113/3; 142/1; 228/3; 298/3; 368/2
C,Function:
                                               97 #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DN:CAA59410.1; PID:g794147
enez Martinez, J.
                                                                                                                                                                                                                                          shown
```

```
509
                                                                                                                                                                 565
                                                                                                                                                                                                                         91
                                                                                                                                                                                                                                                                                        625
                                                                                                                                                                                                                                                                                                                                                                                                                     684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   797
                                                                                                                                                           à
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
A,Description: BC 2.7.1.-; protein kinase Cds1 [validated, MUID:98119835]; is required the kince: Cds1. is phosphorylated and activated by S-phase arrest and activated by DNA dama C;Superfamily: protein kinase and activated by S-phase arrest and activated by DNA dama C;Superfamily: protein kinase Cds1; kinase interaction domain homology; protein kinase the C;Keywords: ATP; phosphotransferase; serine/threonine-specific protein kinase FS-2.13/Domain: kinase interaction domain homology <KIH>
F;162-433/Domain: protein kinase homology <KIN>
F;173-181/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              probable carbon catabolite derepressing protein kinase - fission yeast (Schizosacch C'Species: Schizosaccharomyces pombe C'Species: O3-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 31-Jan-2000 C'Accession: T41587 Barris, D.; Lyne, M.; Rajandream, M.A.; Barrell, B.G. Submitted to the EMBL Data Library, September 1998 A,Reference number: 221968 A,Reference number: 221968 A,Accession: T41587 A,Socsion:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SSNTL----DDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLA 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQI-----YAIKYVN-----LEEA 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIV-DGMLKLIDFGIANQMQPDTTSV 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        663 VKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPF--- 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  325 FLETFCGTMGYLAPEVLKSKNVNLDGG-----YDDKVDIWSLGCVLYVMLTASIPFASSS 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -QQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDFKQRISIPELLAHP-YVQ 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - DSQKNMIKSENSHYEIIRTLGSG----TFAVVKLAVEVNSGKWYAIKIINKRKLLLTSS
                                                                                                                                                                                                                                                                                                                                                                                                                            ERRATEMFOREIDILKSL--HHPGVVQCHEICENDDELFIVMEYVEGGDLMDFLIANGSI
                                                                                                                                                                                                                                                                                                                                                                                 322 PL-VSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSEC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -INQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMWE-CGNIDLNSWLKKKKSI
                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A,Map position: 3
A;Introns: 50/1; 127/3; 245/1
C;Superfamily: AWP-activated protein kinase; protein kinase homology
                                                                                                                                                                                                                                                                                                                         88;
                                                                                                                                                                                                                                                              Length 460;
                                                                                                                                                                                                                                                          ; Score 326; DB 2; Length 46; Pred. No. 1.2e-06; 95; Mismatches 196; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.4%; Score 324.5; DB 2; 29.3%; Pred. No. 1.8e-06; tive 67; Mismatches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IQTH----PVNQMAKGTTEEM 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : || : : | : vSTHEHRTPPSSSEHEATEQL 456
                                                                                                                                                                                                                                                    Query Match 7.4%;
Best Local Similarity 24.4%;
Matches 122; Conservative 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 29.3<sup>3</sup>
Matches 102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene: SPDB:SPCC74.03c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C, Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

15;

Gaps

47;

Indels

```
Ca2+/calmodulin-dependent protein kinase kinase (EC 2.7.1.-) beta chain - rat Ca2+/calmodulin-dependent protein kinase kinase (EC 2.7.1.-) beta chain - rat Cispecies: Rattus norvegicus (Norway rat) Cispecies: Rattus norvegicus (Norway rat) Cispecies: Rattus norvegicus (Norway rat) Cispecies: Chaccesion: JCS669; Pc4493
C; Accession: JCS669; Pc4493
R; Kitani, T.; Okuno, S.; Fujisawa, H.
J. Biochem. 122, 243-250, 1997
A; Title: Molecular cloning of Ca2+/calmodulin-dependent protein kinase kinase beta. A; Reference number: JCS669; MUID:97420710; PMID:9276695
A; Accession: JCS669; MUID:97420710; PMID:9276695
A; Molecule type: mRNA
A; Residues: 1-587 ckIT->
A; Residues: 1-587 ckIT->
A; Residues: 1-587 ckIT->
A; Residues: 455-601 ckIT->
A; Residues: 455-601 ckIT->
A; Experimental source: cerebellar
C; Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homolo C; Keywords: AFP; Phosphotransferase
C; Superfamily: unassigned Ser/Thr or Tyr-specific d ckIT->
F; 162-445, Domain: protein kinase homology ckIN->
F; 170-1944, Domain: ATP-binding #status predicted cATP->
F; 480-493, Domain: calmodulin-binding #status predicted cAB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQ----THPVNQMAKGTTEEMKYV- 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       687
                                HSDKIIRLYDYEITDQYIYMWECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQ
                                                                                                                                                                                                                                                                                                        203 ----RGKLYA--GPEVDVWSCGIVLYVMLVGRLPFDDEFIPNLFKKVNSCV----YVMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YSILKQIGSGGSSKVFQVLNEK-KQIYAIKYVN---LEEADNQTLDSYRNEIAYLNKLQQ
                                                                                                                                                                             H-PHIKLYDVITTPTDIVMVIEYAGGELFDYIVEKKRMTEDEGRRFFQQIICAIEYCHR
                                                                                                                                                                                                                                                                                                                                                                                                          SSRENGKSKKISPKSDVWSLGCILYYMTYGKTPPQQ--IINQISKLHAIIDPNHEIEFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----DCVQLNQ--YTLKDEİGKĞSYGVVKLAYNENDNTYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                191 AMKVISKKKLIRQAGFPRRPPPRGTRPAPGGCIQPRGPIBQVYQEIAILKKL-DHPNVVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        569 IIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250 LVEVLD-DPNEDHLYMVFELVNQGPVMEVPTLKPLSEDQARFYFQDLIKGIEYLHYQKII
                                                                                                                                                                                                                                                                        HGIVHSDLKPANFLIVDGM-LKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          419 QSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            478 -- QQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEK-KQIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -LGQLVGLNSP-----NSILKAAKTLYEHYSGGESHNSSSSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80; Mismatches 126; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 321; DB 2;
Pred. No. 2.6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  535 AIKYVNLEEADNQT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 25.55
Matches 100; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144 TVESHHVSITGLQ---
```

```
C'Genetics:
Aydene: CAMKK
Aydene: CAMKK
Aydene: 12
C'Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homol
C'Keywords: phosphotransferase
C'Keywords: phosphotransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human Ca2+/Calmodulin-depe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Map position: 1
A;Introns: 52/3; 91/3; 151/3; 207/1; 254/2; 288/3; 422/2; 560/2; 592/1; 623/1; 660/3;
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Clate: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 29-Oct-1999
C;Accession: T25433; T27888
R;McMurray, A.
Submitted to the EMBL Data Library, May 1996
A;Reference number: 220033
A;Reference number: 220033
A;Reference number: 22003
A;Molecule type: DNA
A;Rolecule type: DNA
A;Rolecule type: DNA
A;Residues: 1-1016 *MLL>
A;Kxperimental source: Clone T28F4
R;Gardner, A. the EMBL Data Library, June 1996
A;Reference number: 220435
A;Reference number: 220435
A;Recession: T27888
A;Recession: T27888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in Ca2+/calmodulin-driven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                563 QQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSW-LKKKKKSIDPWERKSYWKNMLEAVHT 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          622 IHQHGIVHSDLKPANFLIVD--GMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAI 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140 CHQLHVVHRDLKPENVVFFEKLGMVKLTDFGFSNSYEPGEQ---LNTSCGSLAYSAPEIL 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  680 KDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIE 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---LGDSYDAPAVDVWSLGVILYMLVCGRLPFQE-ANDSETLTKILDCKYSI- 244
                                                                                                                                                                                                                                                                                                                                                                                                                                       PIDN:CAA98148.1; GSPDB:GN00019; CESP:ZK524.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cispecies: Homo sapiens (man)
Cispecies: Homo sapiens (man)
Cispate: 21-Mug-1998 #sequence_revision 21-Aug-1998 #text_change 16-Dec-1998
Ciscossion: JSD191
Risu, L.S.; Tsou, A.P.; Chi, C.W.; Lee, C.H.; Chen, J.Y.
Biomed. Sci. 5, 141-149, 1998
A;Title: Cloning, expression and chromosomal localization of human Ca2+/Caln A;Reference number: JE0191
A;Reference number: JE0191
A;Molecule type: mRNA
A;Residues: 1-417 < HSU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      508 IYSILKQIGSGGSSKVFQVLNEKKQIY-----AIKYVNLEBADNQTLDSYRNEIAYLNKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                calcium/calmodulin-dependent protein kinase kinase (EC 2.7.1.-) - human N;Alternate names: CaMKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a key intermediaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        740 FPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQ 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 317; DB 2;
Pred. No. 6.7e-06;
                                                                                                                                                                                                                                                                                                                                                              A,Status: preliminary; translated from GB/EMBL/DDBJA,Molecule type: DNA,Residues: 1-1016 MBL.
A,Residues: 1-1016 MBL.
A,Cross-references: EMBL:273912; PIDN:CAA98148.1; G:A,Experimental source: clone ZK524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             functions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 29.29
Matches 81; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-417 <HSU>C;Comment: This enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             197 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene: CESP: ZK524.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                  C.Accession: T03022
R;Takekawa, M.; Posas, F.; Saito, H.
Submitted to the EMBL Data Library, May 1997
A;Description: A human homolog of the yeast Ssk2/Ssk22 MAP kinase kinase kinase, MTK1, A;Reference number: 214824
A;Accession: T03022
A;Accession: T03022
A;Residues: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1607 <TAK>
A;Accession: T0302
A;Molecule type: mRNA
A;Residues: 1-1607 <TAK>
A;Molecule type: MRNA
A;Residues: MBL:AF002715; NID:g2352276; PIDN:AAB68804.1; PID:g2352277
A;Note: MTK1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADIWSLGCVVIEMVTGKRPWHEYEHNFQIMYK-VGMGHK---PPIPERLSPEGKDFLSHC 1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----NKİĞEĞQYĞKVYT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      755
                                                                               HRDIKPSNLLVGEDGHIKIADFGVSNEFK--GSDALLSNTVGTPAFMAPES---LSETRK 363
                                                                                                                                                                                                                                                                                                                      Species: Homo sapiens (man)
Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 05-Nov-1999
                                                  --NGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQIINQISKLHAIIDPNHEIEPPDIPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PSGGDSV---LPKSISSAH-----DTRGSSVPENDRL-----ASIAAELQFRSLSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---ETKEYQEPEVPE----SNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --LPEEKRYREMRKNIIG------OUCDIPKS--YDNVMHVGLRKVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     466 STPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         526 VLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1359 CISVDIGELMÄMKEIRPOPNDHKTIKETADELKIFEGIKH--PNLVRYFGVELHREEMYI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHOHGIVHSDLKPAN-FLIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSKISPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            406 HITTEOPVESVSKQSPPISISKWFDPKSICKTPSSNTLDDYMSCFRIPVVKNDFPPACQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDVLKCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSPTEERDEPAYPRGDSSGSTRRSWELR---TLISQSKDTASKLGPIEAIQKSVR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.3%; Score 318.5; DB 2;
23.0%; Pred. No. 9.6e-06;
live 98; Mismatches 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
T25433
hypothetical protein ZK524.4 - Caenorhabditis elegans
                                                                                                                                         --KDLQDVLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                   LKRDPKORISIPELLAHPYVQIQT 779
                                                                                                                                                                                                                                                                                                MAP kinase kinase kinase - human
C;Species: Homo sapiens (man)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -------FKWORG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 23.0%
Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1206
    309
                                                                                                                                      746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    669
                                                688
                                                                                                                                                                                 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1581
                                                                                           g
                                                                                                                                      ò
                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

80

Gaps

sign

Db 360 TEYHQNQGSPKRQPAVQQNGSNSYDSQQQQPQMNQHEMQNSYWGVATPSLGVNNRGT 416	Qy 320LAK 351	Db 417 PTPTQQQHYSSDSNSNSNQSPPGQGNQSGRMVRTIDESTQTDSSLSQANPQNADEVAK 474	Qy 352 LEETKEYQEPEVPESNOKQWQAKRKSECINQNPAASS 388	Db 475 MNRIIEDHRRQIEELNSKNSLERRKNEASKETIKRLLIDKNQIERKALRDKTÄADSPRIG 534		Db 535 CFKTTRTGDSFRDQWVDGWAFAEMDKKTEQINAËRNEIASASALLKKRKFLGIGKEFK 592 Ov 422 -PISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACOLSTPY 469	: : : : : : : : : : : :	OHQILATPLQNLQVLASSSANECISVKGRIYS	Db 652 BETDLSMEKERLEKEKQHHVRELKRASNESASQFNDHRLIHKRYLMLNLGKGGF 706	·521 SKVPQVLNEKKQIYAIKYVNLEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDY	707	LTIDNHSFCTVLEYVPGN-DLDFYLKQNRSISEKEARSIIMQVVSALVYLNEKSTPIIHY	QY 631 DLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQ-VGTVNYMPPEAIKD 681	Db 825 DLKPANILLESGNTSGAIKTTDFGLSKIMEGESDDHDLGIELTSQFAGTYWYLPPETF1- 883		Db 884VPPPKITCKVDVWSIGVIFYQCIYGKKPFGNDLTQQKILEYNTIINA-REVS 934	Cy 740 FPDIPEKDLQDVLKCCLKRDPKQRISIPELLAH 772 Cy 740 FPDIPEKDLQDVLKCCLKRDPKQRISIPELLAH 772 Dh 03c PDEXPONSERANDPUPERT, OVER PROPERTY AFT AFT	i	RESULT 15 S40704	legans	C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 28-May-1999 C;Accession: S40704	R;Smith, M. submitted to the EMBL Data Library, December 1993	A; Karerence number: S40/01 A; Katusion: S00/04 A; Status: preliminary	A,Molecule type: DNA A,Residues: 1-1044- <smi> A,Residues: 1-1044-<smi></smi></smi>	C.GLOSS LEGERATION DE LA CONTRACTION DEL CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DEL CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTION DE LA CONTRACTI	A;Introns: 80/5; 19875; 203/5; 209/5; 200/5;	F;/41-/49/Region: procein Ainabe Air-Dingling Moore		LLKLE	Db 200 SSPTEMQQCMQAMSEDSIEMRDYNSGVHHMHPHQMQMQQQQQHHQQQXNMS 250	Qy 103 LKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVFLE 162
. Match 7.2%;	Best Docal Similarity 25.7%; Fred. No. 2.78-05; Matches 90; Conservative 79; Mismatches 116; Indels 65; Gaps 16;	Qy 461 PACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGS 517	Db 11 PYSPVSSPQSSPRLPRRPTVESHHVSITGMQDCVQLNQYTLKDEIGK 57	Qy 518 GGSSKVFQVLNEK-KQIYAIKYVNLEEADNQTLDSY 552	Db 58 GSYGVVKLAYNENDNTYYAMKVLSKKKLIRQAGFPRRPPRGTRPAPGGCIQPRGPIEQV 117	QY 553 RNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKKSIDPWERKS 610 Dh 118 VOFTATIKKI, PHENVOKTINEVID-DENEDHI-MVFETANGEDVMEVPTIKEIGEDARF 175	611 YWKNYLEAVHTIHQHGIVHSDLKPANFLI-VDGMLKLIDFGIANQWQPDTTSVVKDSQVG 66	Db 176 YPQDLIKGIEYLHYQKIHHRDIKPSNLLVGBDGHIKIADFGVSNEFKGSDALLSNTVG 233	Qy 670 TVNYMPPBAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISK 727	-E	Qy 728 LHAIIDPNHEIBFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYV 775	ZZZ DRSKI-KSÇABEFFUÇPUABULKULIIKULUKNFESKIVVFEIKLERVV		elegans	ay-zour ortium.	Science 282, 2012-2018, 1998	MID:9851916 MED:9851916 And www sanger.ac.uk/Projecte	מ ניין דיין דיין דיין דיין דיין דיין דיין	A;Modecule type: DNA A;Modecule type: DNA A;Residues: 1-1004 <sto></sto>	A;Cross-references: GB:chr_III; PIDN:CAA82347.1; PID:g3873989; GSPDB:GN00021; CESP:C07A9 C;Genetics:		ecific protein ki	Query Macch 7.1%; Score 309; DB 2; Length 1004; Best Local Similarity 20.1%; Pred. No. 1.4e-05; Marches 176; Conservative 159; Mismatches 326; Indels 214; Gaps 39;	QY 44 NNPEDWISLLLKLEKNSVPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRF-AE 102	Db 163 SSPTEMQQCMQAMSEDSIEMRDYNSGVHHMHPHQMQMQQQQQHHQQQYNMS 213	QY 103 LKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVFLE 162 Db 214 YHNHQQQMQMHYHQQQQQYQQQQQQHQMYAP-QIQQQQQQPQQQSQQQSQQQSQQQ 268	ILOKKOLLSE	Db 269 QSSAALQHVNESSNLSSAGSISDREPEQHGGTPQRPTAPQSSTATDKKTR 318	222 ARFLYGENMPPQDAEIGYRNSLRQINKTKQSCPFGRVPVNLIANSPDCDVKTDDSVVPCFM	319 NKKKAGPIEDQAIPNQEKALIEFMNVGGEVANGNSVAKULLE	Oy 282 KRQISRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHF319

: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :	MLEIALRNINLOKKOLL 	6 QSSAALQHVMESSNLSSAGSISDREPEQHGGTPQRPTAPQSSTATDKKTR 355	2 ARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFM 281	2 KRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHF 319	7 TEXHQNQGSPKRQPAVQQNGSNSYDSQQQQQQQMQHEMQNSYWGVATPSLGVNNRGT 453	0	4 PTPTQQQHYSSDSNSNSNQSPPGQGNQSGRMVRTIDEETQTDSSLSQRFQANPQNADE 511	9 LAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASS- 388	2 VAKWNRIIEDHRRQIEELNSKNSLERRKNEASKETIKRLLIDKNQIERKALRDKTAADSP 571	9 421	2 RIGCFKTTRIGDSFRDQWVDGWAFAEMDKKTEQINAERNEIAŠASALLKKRKPLGIGK 629	2PISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPY 469	O EPKRPQAVNSQNDSNGMQPSTSSNTNGD-DAIFRRPEEPKEIQYQEYIELDEIXKLRREH 688		9 LRKEETDLSMEKERLEKEKQHHVRELKRASNESASQFNDHRLLHKRYLMLNGK 743	ω	4 GGFSEVWKAFDIBENRYVACKIHHVNKDWKEEKKANYVKHAMREKDIHKSLDHC-RIVKQ 802		3 YDLLTIDNHSFCTVLEYVPGN-DLDFYLKQNRSISEKEARSIIMQVVSALVYLNEKSTPI 861		1	9 IKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNH 736	2 FIVPPPKITCKVDVWSIGVIFYQCIYGKKPFGNDLTQQKILEYNTIINA-R 971	7 BIEFPDIPEKDLODVLKCCLKRDPKORISIPELLAH 772	2 EVSFPSKPQVSSAAQDFIRKCLQYRKEDRADVFELAKH 1009	
25.	163	306	356	282	397	320	454	349	512	389	572	422	630	470	689	518	744	573	803	628	862	619	922	737	972	
ΩÞ	δλ	QQ	\(\frac{40}{5} \)	ò	qq	ò	QC	δλ	q	δ	업	ò	q _Q	ò	Dp	ò	QQ	ò	QQ	ò	අු	ò	qu	ò	qq	

Search completed: September 29, 2004, 16:18:18 Job time : 50 secs

Q8dzt7 mus musculu

leishmania leishmania Q86093 mus musculu Q86078 mus musculu Q86078 mus musculu Q8616 drosophila Q94512 homo sapien Q94512 homo sapien Q94512 homo sapien Q81418 drotyosteli Q94218 drotyosteli Q94218 drotyosteli Q9483 homo sapien Q81285 caenorhabdi Q9423 homo sapien Q841x6 mus musculu Q841x7 kenopus lae Q9672 homo sapien Q96712 homo sapien Q96714 homo sapien Q96714 homo sapien Q96714 drosophila Q95716 drosophila Q95716 drosophila

```
W SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE Eye, and Testis;

A Strausberg R.;

Strausberg R.;

Strausberg R.;

Strausberg R.;

STRAUS BOOK STRANGOS TO THE EMBL/GenBank/DDBJ databases.

BEL; SCHOOK STRAUS SER, AAH10063 T.;

BEL; BCOOK STRAUS SER, AAH128 SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BERSL; BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1;

BCOOK STRAUS SER, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99.9%; Score 4373; DB 4; Length 857; llarity 99.9%; Pred. No. 1.7e-270; Conservative 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Butele
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               857 AA; 97072 MW; 51F40A3CD1677AC5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
TTK protein kinase (PYT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              857 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                                 QBQZT7
QBC0G3
QBC0H2
QBCH42
QBTHP1
QBTHP1
QBYHP6
Q9YHP6
Q9YHP6
Q9YHP3
QBB11D2
QB11D2
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
QB11D3
Q
Q9GRT3
Q9N9J2
Q8BXM8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q96RR4
Q95YH6
Q95YH7
Q8MSQ4
                                                                                                                                       PRELIMINARY;
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
Matches 840; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OMINGO 'I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kinase.
SEQUENCE
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9BW51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O9BW5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
     Q9BW51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9bw51 homo sapien
Q8by97 mws musculu
Q88t92 xenopus lae
Q8bx21 mws musculu
Q8ay33 brachydanio
Q7.2a4 brachydanio
Q15272 homo sapien
Q84vx arabidopsis
Q90a2 arabidopsis
Q90a5 arabidopsis
Q90a5 arabidopsis
Q90a5 arabidopsis
Q80a81 arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q8la38 arabidopsis
Q98s30 guillardia
Q90zy6 brachydanio
                                                                                                                                                         September 29, 2004, 16:13:55 , Search time 138 Seconds (without alignments) 1922.832 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                               4376
1 MNKYRDIKNKFKNEDLTDEL.....GGESHNSSSSKTFEKKRGKK 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1017041
                      GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                            1017041 segs, 315518202 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                 - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPTREMBL 25:*

Sparchea:*
2: sp bacteria:*
3: sp lungi:*
5: sp lungi:*
5: sp lungi:*
6: sp lungi:*
6: sp lunciel:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp organelle:*
7: sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9BW51
Q8BX97
Q8BX192
Q8AXG3
Q7T2A4
Q15272
Q84VX4
Q9CA22
Q8LN55
Q8LN55
Q9VBH1
P93833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q8LA38
Q98S30
Q90ZY6
                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _rvirus:*
_bacteriap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sp archeap:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        113
                                                                                                                                                                                                                                                           US-10-081-119-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                   OM protein
                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database
                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ.
```

ö

Gaps

. 0

Mus

```
Rodentia; Sciurognathi; Muridae; Murinae;
Mammalia; Eutheri
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                             Query Match
Best Local Si
Matches 604;
                                                                                                                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                  73
                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                      193
                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            530
    g
                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   업
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gg
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                  300
                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                        540
                                              120
                                                               136
                                                                                180
                                                                                               196
                                                                                                                  240
                                                                                                                                  256
                                                                                                                                                                    316
                                                                                                                                                                                                    376
                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                      436
                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                       496
                                                                                                                                                                                                                                                                                                         556
                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                          616
                                                                                                                                                                                                                                                                                                                                                            999
                                                                                                                                                                                                                                                                                                                                                                           919
                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                              736
                                                                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                               796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                856
             60
                              96
                                                         NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                              PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVRNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                         OILATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                  QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                      LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                      KSIDPWERKSYWKMYLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                      SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVMSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                            IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PVNQMAKGTTEEMKYVLGQLVGLNSPNS1LKAAKTLYEHYSGGESHNSSSKTFEKKRGK
                        MIKVRDIKOKFKNEDLTDELSLNKISADITDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                   EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                   NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                    SGNDSCELRNLKSVQNSHFKEPLVSDEKSSEL11TDS1TLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                    PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                       PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                           LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                             SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQ
                                                                                                                                                                                                                                                                                                                                                                                                                               IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
             MNKVRDI KNKFKNEDLTDELSLNKI SADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                               VPLSDALLNKLIGRYSQALEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                            KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAR.2003 (TrEMBLrel. 23, Created)
1-MAR.2003 (TrEMBLrel. 23, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Dual specificity protein kinase TTK.
Mus musculus (Mouse).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K 857
                               17
                                               61
                                                               17
                                                                                121
                                                                                                 137
                                                                                                                                  197
                                                                                                                                                   241
                                                                                                                                                                                                     317
                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                        437
                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                         497
                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                           557
                                                                                                                                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                                                                                                                                                                                                                               677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                797
                                                                                                                   181
                                                                                                                                                                    257
                                                                                                                                                                                     301
                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q8BY97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8BY97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  상 임
                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            상염
```

```
C STRAIN=CS7BL/61; TISSUE=Thymus;

MEDLINE=22354681; PubMed=12466851;

The FANON Consortium,

The FANON Consortium,

A the RAKEN Genome Exploration Research Group Phase I & II Team;

A the RIKEN Genome Exploration Research Group Phase I & II Team;

A the RIKEN Genome Exploration Research Group Phase I & II Team;

To 7.70 full-length cDNAs.";

Nature 420:563-573(2002).

MADLY MGD; MGI:1194921; Ttk.

MGD; MGI:1194921; Ttk.

MGO; GO:0005524; FaTP binding; IEA.

MGO; GO:0006524; Fiprotein serine/threonine kinase activity; IEA.

MGO; GO:0006468; Piprotein amino acid phosphorylation; IEA.

RITEPRO; IPR00219; Prot kinase.

RITEPRO; IPR00219; Prot kinase.

RITEPRO; IPR00821; Ser thr pkinase.

RITEPRO; IPR00821; Ser thr pkinase.

RITEPRO; IPR008241; TPR-1ike.

RITEPRO; IPR008241; TPR-1ike.

RITEPRO; PR008241; TPR-1ike.

RITEPRO; PR008241; TPR-1ike.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           410 PPISVPKWLDPKSACETPSSSSLDDYMKCFKTPVVKNDFPPACPSSTPYSQLARLQQQQQ 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENCKKFAFVHVSFAQFELSQGNLKKSEQLLHKAVETGAVPLQMLETAMRNLHLQKKQLLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253 NPFKQTHAAKRSCPFGRVPVNLLNSPDFYVKTDSSAVTQLTTRKGSGPD-RDAILPGSRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPLNDDLLNKLIGRYSQAIEVLPPDKYGQNESFARIQVRLAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EEEKKOLSASTVLTAQESFSGSLGHLONRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MNKVRDIKNKFKNEDLIDELSLNKISADTIDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PELABRRPMOWOSTRKPECVFONPAAFAPLRHVPDVTPKAD-------KES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            815;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ch 10.7%; Score 3092.5; DB 11; Length 11 Similarity 74.2%; Pred. No. 7.9e-189; 604; Conservative 83; Mismatches 100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00069; pkinase; I.
Pr00060; Pr001; Prot. kinase; I.
SMART; SM00219; Tyrk: I.
SMART; SM00219; Tyrk: I.
PROSITE; PS50011; PROTEIN KINASE DOM; I.
SEQUENCE 815 AA; 91524 WW; FIZAZCO582536767 CRC64;
```

7:

셤 ò qq

ઠે

임

ò 셤

 δ

```
469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  764
                                254
                                                                                                                                               311
                                                                                                                                                                                                                                                                                                                KSSELIITDSITLKNKTESSLLAKLEETK--EYQEPEVPESNQKQWQAKRKSECINQNPA 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
255 FEDIGRKPLINMSAKT---CPLGRVPVQPATSPDTRTRKSDGSGSSSVVKRPFSSMRVPV
                                                                                                                                                                                                                                     1: | | | : : | | | : : | | | : : | | : : | | : : | : : | : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : | : | : : | | : : : | | : : | : | : : | | : : | : : | : | : : | : | : : | : : | : | : : | : | : : | : | : : | : : | : | : : | : | : : | : : | : | : : | : | : : | : | : : | : | : : | : | : : | : | : :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       470 PVFVCGTPVNKSQEDYMVCFRTPVVKTNLGPLAQMSTPYNNRSDYQQPQ----TPVGQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DCFPISAPFASSDCIVVKGRAYAVLKQIGTGGSSKVFQVMDDKKHLYAIKYVNLEEADQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 645 RKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQIQPDVTSIVKDSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AE-IGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDV-KTDDSVVPCFMKRQTSRSE---
                                                                                                                                                                                                    ----CRDLVVPGS-----KPSGNDSCELRNLKSVQNSHFKEPLVSDE
                                                                                                                                                                                                                                                                                                                                                ::::||::
RNEDLIL-----GSTSTAVLNPQENSKPSESAPPLLPNIN-----ARLSDTTKPNNI
                                                                                                                                                                                                                                                                                                                                                                                                                        386 ASSNHWQIPELARKVNTEQKHTTFE-QPVFSVSKQ------SPPISTSKWFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           418 EAEWKWKVPETPROI------FOPEMIFPAGKRKSTEPSANPGSRRVSPPAPSLSKCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLQN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RKSYWKNWLBAVHIIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH--PVNQM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --LQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=CS7BL/6J;
MEDLINB=2234683; PubMed=12466851;
The FANTOM Consortium,
The RIKEN Genome Exploration Research Group Phase I & II Team;
The RIKEN Genome Exploration Research Group Phase I & II Team;
"Analysis of the mouse transcriptome based on functional annotation 60,770 full-length cDNAs.";
Nature 420:563-573 (2002).
BMSL; AK049200; BAC33605.1; -.
MGD; MGI:1194921; Ttk.
GO; GO:0005524; F:ATP binding; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QKETTEEMKRILGQLIGLNSPNSISRAAKNLYDQFNSGRSLDLSTLGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-0CT-2003 (TrEMBLrel. 25, Last annotation update)
Dual specificity protein kinase TTK (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                      235
                                                                                                                                                                                                                                                                                                             328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  825
                                                                                                                                                                                                                                                                                                                                                                  371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8BX21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8BX21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q8BX21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \stackrel{\diamond}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                   ò
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22;
                                                                                   649
                                                                                                                                         720
                                                                                                                                                                                                 709
                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                             769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75
                                                           KSINPWERKSYWKNMLEAVHIHQHGIVHSDLKPANFVIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                      IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                  LDRVKSFKTKYGTDDNWTDELTFSKSSADTTEHSGIFTH-LVTTKTPEEWLNCLLKLENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GLPQIDPQLLNKLIDNYSQAVGALPAEKHSHNESYAKILVHFAELKAIHDLDEAREQFQF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.

-1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.

REMBL, AFS25091, AAR27843.1; -.

R BARBL, AFS25091, AAR27843.1; -.

R GO; GO:0005524; F:ATP binding; IEA.

GO; GO:0004674; F:protein serine/threonine kinase activity; IEA.

R GO; GO:0004674; F:protein serine/threonine kinase activity; IEA.

R GO; GO:0004674; F:protein amino acid phosphorylation; IEA.

R GO; GO:0006468; P:protein amino acid phosphorylation; IEA.

R DO GO:0006468; P:protein amino acid phosphorylation; IEA.

R InterPro; IPR00271; Ser thr_pkinase.

R InterPro; IPR00271; Ser thr_pkinase.

R PROSITE; PS00107; PROTEIN KINASE ATP; 1.

R PROSITE; PS00107; PROTEIN KINASE ATP; 1.

R PROSITE; PS00107; PROTEIN KINASE DOM; 1.

R PROSITE; PS00108; PROTEIN KINASE DOM; 1.

R ATP-binding; Kinase; Serine/threonine-protein kinase; Transferase.

C SEQUENCE 882 AA; 99078 MW; 51C0F1B54DFDCD00 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MNKVRDIKNKFKNED-LTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SVPLSD-ALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 ARANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LSEEEKKNL--SASTVLTAQESFSG-SLGHLQNRNNSCDSRGQTTKARFLYGENM-PPQD
                          KSIDPWERKSYWKNMLEAVHTIHOHGIVHSDLKPANPLIVDGMLKLIDFGIANOMOPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xenopus laevis (African clawed frog).

Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Maphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae,
Xenopodinae, Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49.3%; Score 2157.5; DB 13; Length 882;
Larity 51.7%; Pred. No. 3.9e-129;
Conservative 134; Mismatches 208; Indels 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     spindle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [1]
SEQUENCE FROM N.A.
Magnaghi-Jaulin L., Vigneron S., Lorca T., Labbe J.C.;
"X-Mpsl/TTK is a novel Xenopus protein required for the
"X-Mpsl/TTK is a novel Xenopus protein databases."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                               PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAK 814
                                                                                                                                                                                                                                                                                                                                                                                                                        803
                                                                                                                                                                                                                                                                                                                                                                                             882 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            459;
                                                                                                                                                                                              650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mps1/TTK.
                                                                             590
                                                                                                                                      199
                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                  770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
Q98T92
ID Q98T92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loca
Matches
```

à g à g ò d 8

```
415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local
Matches 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . <u>අ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                    61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                               132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENCKKFPAFVHVSFAQFELSQGNLKKSEQLLHKAVETGAVPLQMLETAMRNLHLQKKQLLF 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           410 PPISVPKWLDPKSACETPSSSSLDDYMKCFKTFVVKNDFPPACPSSTPYSQLARLQQQQQ 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYALKYVN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              529
                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. Pubmed 2.2. Johnson S.L., Keating M.T.; Poss K.D., Nechiporuk A., Hillam A.M., Johnson S.L., Keating M.T.; "Mps1 defines a proximal blastemal proliferative compartment essential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEEKKALSASTVLTAQESPSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QCLSTPLQSLQ1SGSSSINECISVNGRIYS1LKQ1GSGGSSKVFQVLNEKKQ1NAIKYVN
                                                                                                                                                                                                                                                                                                                                              MSKARDIKAKI-NEDCTDELSLSKICADHTE---TVNQIMRVGNTPENWLNFLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                             SPENDDELINKLIGRYSQAIEVLPPDKYGQNESFARIQVRLAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEVPESNOKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                      MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSW 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ol-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Mpsl.
Brachydanio rerio (Zebrafish) (Danio rerio).
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27;
                                                                                                                                                                                                                   DB 11; Length 585;
GO, GO:0004672; F:protein kinase activity; IEA.
GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
InterPro; IPR00719; Prot kinase.
InterPro; IPR008941; TPR-like.
                                                                                                                                                                                                                47.5%; Score 2077.5; DB 11; Lengt. 69.8%; Pred. No. 2.8e-124; Live 66; Mismatches 87; Indels
                                                                                                                                                                          65550 MW; 26E683DFA6D561CF CRC64;
                                                                   Promission of the property of the property of the property property of the property profession of the property profession of the property profession of the property profession of the property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property property 
                                                                                                                                                                                                              Query Match
Best Local Similarity 69.8
Matches 416; Conservative
                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             С
      ò
                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        台
                                                                                                                                                                                                                                                                                                                                                                                  \delta
```

```
28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ECINONPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVS-----KQSPPISTSKWFDPK 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --TOTPSSAFSNESITIKGKQFFIFKMIGRGGSSKVYQVFDHKKHVYVAVKYVNLEEADAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMARANCKKFAFVHIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  133 FAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLSEEEKKNLSASTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298 TPDGDSYSLNIKPPV---ISPDYLREDIEEGHTITALLNRAEKRETARTEETTDINQIIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355 INSTEGCOAFLINILEKRADPHSDAAFLSKLLDCYSKVFARFPLAEHCKTESYARMLVRYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELKGI EDPEDAADDFSIARSHCKAFAFVHIAHAQFELSRGNSRKSVSILQKALSSNARPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------TRQTN------KTKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CPFG-----RVPVNLLNSPDC---DVKTDDSVVPCF---MKRQTSRSECRDLVVPGSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------SVQNSHFK------EPLVSDEKSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----VPESNOKOWQAKRKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E------WKIPALITKHISPEDRKASLEPVSSSSSHHAVRIPAPLR----LNPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        433 SICKTPSSNTLDDYMSCFRTPVVKN-----DFPPACQLSTPYGQPACFQQQQHQILATPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            579 LSCOTP--NYROPNPNSFVTPVVKQRPVIVSVPATAÓKMCPTALP-CTPÓSGVSYIQPP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   488 ONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVINEKKQIYAIKYVNLEEADNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTDELSLNK--ISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNSVPLSD-ALLNKLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   239; Gaps
I for zebrafish fin regeneration.";

L Development 129:5141-5149(2002).

R GO; GO:0005524; F:ATP binding; IEA.

DR GO; GO:0004674; F:protein serine/threonine kinase activity; IEA.

BR GO; GO:0004713; F:protein exine/threonine kinase activity; IEA.

BR GO; GO:0004648; P:protein amino acid phosphorylation; IEA.

DR InterPro; IPRO02299; Ser_thr_pkinase.

DR InterPro; IPRO08211; Ser_thr_pkinase.

DR InterPro; IPRO08241; Ser_thr_pkinase.

DR InterPro; IPRO0841; TPR-Ilike.

DR PRODOM; ProDOM; Prot kinase; 1.

DR PRODOM; Prot kinase; 1.

DR SMART; SM00129; TYEC; 1.

DR SMART; SM00129; TYEC; 1.

DR PROSITE; PS00110; PROTEIN KINASE_DOM; 1.

DR PROSITE; PS00110; PROTEIN KINASE_DOM; 1.

DR PROSITE; PS00101; PROTEIN KINASE_ST; 1.

DR PROSITE; PS00108; PROTEIN KINASE_ST; 1.

DR PROSITE; PS00108; PROTEIN KINASE_ST; 1.

PROSITE; PS00108; PROTEIN KINASE_ST; 1.

TOTHER PROSITE; PS00108; PROTEIN KINASE_ST; 1.

TOTHER PROSITE; PS00108; PROTEIN KINASE_ST; 1.

TOTHER PROSITE; PS00108; PROTEIN KINASE_ST; 1.
                                                                                                                                           IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 13; Length 983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193 LTAQESFSGSLGHLQNRNNS---CDSRGQTTKARFLYG-----ENMP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   al Similarity 39.4%; Pred. No. 1.3e-96; 400; Conservative 136; Mismatches 239; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELIITDSITLKNKTESSLLAKLEETKEYQEPE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300 PSGNDSCE--LRNLK-----
```

```
339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       880
                                                                        133 FAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLSEEEKKNLSASTV 192
                                                                                                                                                                                                                                      193 LTAQESFSGSLGHLQNRNNS---CDSRGQTTKARFLYG-ENMPPQDAEIGYRNSLRQTNK 248
                                                                                                                                                                                                                                                                                    237
                                                                                                                                                                                                                                                                                                                                   296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           291 CSSKKGTPDGDSYSL-NIKPPVISPDYLREDIEEGHTITALLNRAEKRETARTEETTDIN 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --AKRKSECINQNPAASS 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            469 NARPIELLOTAIRNLKSGKTLLLPAEHOESSE-AENVEAQNGMKREENPVKAPEDHQKPF 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          450 ----FRTPVVKN-----DFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSAN 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            739
  71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIE
                                                                                                                                                                     238 TAMA---ERVPMVPLSIPENETSDSD----CAQKAEAPFTHSSGFSRQTSGSSVRSAFSL
                                                                                                                                                                                                                                                                                                                                                                                                                              297 GSKPSG---NDSCELRNLK-----SVQNSHFKEPLVSDEKSSELIITDSIT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----HWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      588 PNPNSFVTPVVKQRPVIVSVPATAQKMCPTALP-CTPQSGVSYIQPP---TQTPSSAFSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTIHOHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        824 KDISS---NGKPGSKISAKGDVWSLGCILYCMTYGKTPFQNITNQISKIHAIIDPSHEID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPDI PEKDLODVLKCCLKRDPKORISI PELLAHPYVOIQTHPVNOMAKGTTEEMKYVLGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   881 PPDIPEKDLLDVLKKCLVRNPRERISIAELLDHPYLQLQPQPAPEPAETSSSDFKRILNE
  16 LCQKLAMMKQLFNEDDTD---YINQ-AISSNSPDTCRTFLSNLEKKGNPQADPSLLSKLM
                                               GRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMARANCKKFAFVHIS
                                                                                                                                                                                                                                                                                 -----ALDHTQGSRRSDGTCELKPSNT---FLHSDQKFSPQEENGPVWRTGSQHRR
                                                                                                                                                                                                                                                                                                                                   TKOSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMK-------ROTSRSECRDLVVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---KTES--SLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     350 QIISTNSTEGCQAFLKNLEKRADPHSDAAFLSKLLDCYSKVFARFPLAEHCKTESYARML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  410 VRYABLKGIEDPEDAADDFSIARSHCKAFAFVHIAHAQFELSRGNSRKSVSILQK-ALSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIAYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKKSIDPWERKSYWKNMLEAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---TPSSNTLDDYMSC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LVGLNSPNSILKAAKTLYEHYSGGESHN-----SSSSKTFEK 836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LVALOSPNSIARASNLAMMCNSGRKLDVSECVKSSSQTLWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       350 AKLEETKEYQEPE-----VPESNOKOWQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               424 S---TSKWFDPKSICK------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1,10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  389 N-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               015272
015272;
01-NOV-1996
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         740
                                                                                                                                                                                                                                                                                                                                   249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 941
                                               73
                                                                                                                                                                                                                                                                                      190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٢
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           015272
ID 01
AC 01
DT 01
                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                            음
                                                                                                                                                                                  q
                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                               ò
                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=22388257; PubNed=12477932;

MEDLINE=22388257; PubNed=12477932;

A trausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A lausner R.D., Collins F.S., Wagner L., Schaefer C.F., Bhat N.K.,

A ltschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A patchenco L., Marusina K.H., Farmer A.A., Walbin G.M., Hong L.,

B stapleton M. Joares M.B., Formido M.F., Casavant T.L., Scheetz T.E.,

B stapleton M.J., Usdin T.B., Toshiyuki S., Carninci P., Frange C.,

R has S.A., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

B soak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muxny D.M., Sodergen B.J., Du X., Gibbs R.A.,

A talk S. Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Mhiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

A larksley R.W., Touchman J.W., Green B.D., Dickson M.C.,

A nakesley R.W., Touchman J.W., Green B.D., Myers R.W., Butterfield Y.S.,

A krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,

Jones S.J., Marra M.A.;

and mouse cDNA sequences.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                               667
                                                                                                                                          812
                                                                                                                                                                                         727
                                                                                                                                                                                                                                      869
                                                                                                                                                                                                                                                                                    LHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTHPVNQMAK 787
                                                                                                                                                                                                                                                                                                                                   929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72
TLDSYRNEIAYLNKLOQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWE
                           RKSYWKNWLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQ
                                                                                                                                                                                         VGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LIDELSINK--ISADIIDNSGIVNQIMMANNPEDWLSLLLKLEKNSVPLSD-ALLNKLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 216; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-0CT-2003 (TrEMBLrel. 25, Created)
01-0CT-2003 (TrEMBLrel. 25, Last sequence update)
01-0CT-2003 (TrEMBLrel. 25, Last sequence update)
01-0CT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein.
Brachydanio rerio (Zebrafish) (Danio rerio).
Brachydanio rerio (Zebrafish) (Annio rerio).
Brachydanio rerio (Zebrafish) (Annio rerio).
Actinopterygii, Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                              GTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHN----SSSSKTFEK 836
                                                                                                                                                                                                                                                                                                                                                                                                            DB 13; Length 982;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 37.6%; Score 1646; DB 13;
Best Local Similarity 40.5%; Pred. No. 1.9e-96;
Matches 406; Conservative 126; Mismatches 254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l protein.
982 AA; 110011 MW; 3B9C7D38DDF76C22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>:</del> ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.;
Submitted (JUL-2003) to the
EMBL; BC054627; AAH54627.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proc. Natl: Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Kidney;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hypothetical
SEQUENCE 98
  548
                                                                                                                                       753
                                                                                                                                                                                                                                      813
                                                                                                                                                                                                                                                                                                                                                                                788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
                                                                                            608
                                                                                                                                                                                         899
                                                                                                                                                                                                                                                                                    728
                                                                                                                                                                                                                                                                                                                                 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q7T2A4
Q7T2A4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
77244
10 07724
10 07724
10 0772
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01-0
10 01
                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                            Д
                                     . අ
                                                                                                                                  g
                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                            à
```

```
226 FLNOP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                     Concourt Fischer W.H., Hunter T.;

MEDLINE=93149596; PubMed=7678926;

MEDLINE=93149596; PubMed=7678926;

Lindberg R.A., Fischer W.H., Hunter T.;

Concogene 8:551-35(1993).

Screening an expression library with antibodies to phosphotyrosine.";

Concogene 8:551-35(1993).

SIMILARITY: BALONGS TO THE SER/THR PAMILY OF PROTEIN KINASES.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR; A42861.

PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RKSYWKNWLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQ 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RKSYWKOMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQ 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISK 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWE 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTHPVNQMA 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LHAIIDPNHEIEFPDIPEKDLQDVVKCCLKRDPKQRISIPELLAHPYVQIQTHPVNQMA 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYWWECGNIDLNSWLKKKKSIDPWE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ONLOVLASSSANECISVKGRIYSILKOIGSGGSSKVFQVLNEKKOIYAIKYVNLEEADNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5 ONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota, Viridiplantae; Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, rosids,
eurosids II, Brassicales, Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
                                                                Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              o;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tch 35.7%; Score 1564; DB 4; Length 305; al Similarity 99.7%; Pred. No. 6.7e-92; 298; Conservative 1; Mismatches 0; Indels
                                 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      305 AA; 34971 MW; 2B3F757EEC1CE7D1 CRC64;
Phosphotyrosine picked threonine kinase (PYT) (Fragilharoverse (BYT) (Fragilharoverse Sukarvorse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          777 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-070N-2003 (TrEMBLrel. 24, Created)
01-070N-2003 (TrEMBLrel. 24, Last sequenc
01-071-2003 (TrEMBLrel. 25, Last annotat
At1977720.
Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [1]
SEQUENCE FROM N.A
                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q84VX4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
```

```
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74
Cheuk R., Chen H., Kim C.J., Shinn P., Bowser L., Carninci P.,
RA Chan M.M., Chang C.H., Dale J.M., Hayashizaki Y., Hauan V.W.,
RA Ishida J., Jones T., Kamiya A., Karlin-Neumann G., Kawai J., Lam B.,
Lee J.M., Lin J., Miranda M., Narusaka M., Nguyen M., Onodera C.S.,
RA Tang C.C., Toriuni M., Wang C., Wu H.C., Yamada K., Yu G., Yuan S.,
Anjoraki K., Davis R.W., Theologis A., Ecker J.R.,
Chinozaki K., Davis R.W., Theologis A., Ecker J.R.,
RT "Arabidopsis ORF clones",
RNBL, BTO04636; AA042882.; The Check G.S.,
RNBL, BTO04636; AA042882.; The Check G.S.,
RNBL, BTO04636; P.POTEIN EMBL/GenBank/DDB databases.
RNBL, BTO04636; P.POTEIN EMBL/GenBank/DDB databases.
RO, GO:0004113; F.POTEIN extrase activity, IEA.
GO, GO:0004113; F.POTEIN extrase activity, IEA.
RO, GO:0004113; F.POTEIN EMINASE A.B.
RICE-Pro, IPRO02290; Ser thr pkinase
RICE-Pro, IPRO02290; Ser thr pkinase.
RICE-Pro, IPRO0145; TYP pkinase.
READ, PRO00001; Prot Kinase; 1.
RYART; SM00219; TYRC; 1.
RYART; SM00219; TYRC; 1.
RYART; SM00219; TYRC; 1.
RYART; SM00219; TYRC; 1.
RYAST; RYANGTEIN KINASE ATP; 1.
RROSITE; PS00101; PROTEIN KINASE ST.,
RROSITE; PS00103; PROTEIN KINASE ST.,
RROSITE; PS00104; PROTEIN KINASE ST.,
RROSITE; PS01107; PROTEIN KINASE ST.,
RROSITE; PS01107; PROTEIN KINASE ST.,
RROSITE; PS01108; PROTEIN KINASE ST.,
RROSITE; PS01108; PROTEIN KINASE ST.,
RROSITE; PS01108; PROTEIN KINASE ST.,
RROSITE; PS01108; PROTEIN KINASE ST.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 SHL----DACIGSKHQ-------NLPSVDSEVSLKSEYKDSSSLAKIQGQLGEFF-N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : | :: | :: | :: | 325 KQQQITTGLEAPVG-----SSIYGSDGQANARLPEELHTSVSSQPQKSDKHEKVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99 RFAELKAI----QEPDDARDYFQMARAN-----CKKFAFVHISFAQFELSQGNVKKSKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         204 GHLONRNNSC-DSRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNK-TKQSCPFGRVPVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              322 PLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382 ONPAASSNHWQIPELARKVNTEOKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   272 ANPHAVQSQGNLPSCC----PSSKVSNILHPNKDATASEMPASTN---DPEVRVKETDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      582 IYMYMECGNIDLNSWLKKK------KSIDPWERKSYWKNMLEAVHTHQHGIVHSDLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46 PEDWLSLLLKLEKNSVPLSDALLNKLIGRYSQA-----IEALPPDKYGQNESFARIQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15 PKSLVRPILNLETTSSSSSSSSSSPELLRHLQAAFKRHRPLSKMQTTSIGPRRSVAPQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASRNTRLVTAEGQRSQDVVTLSQSLAANTLTQDTTNNLAITSVAGESASITQPTVSEHFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LLQKAVERGAVPLEMLEIALRNLNLQKKQLLSEEEKKNLSASTVLTAQE----SFSGSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            442 ILDDYMSCFRIPVVKNDFPPACQLSTPYGQP----ACFQQQQHQILATPLQNL---QVLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SSSANEC-----ISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / Match 14.8%; Score 647.5; DB 10; Length 777; Local Similarity 27.1%; Pred. No. 7e-33; nes 217; Conservative 111; Mismatches 279; Indels 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   544 ADNOTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----RTRC---
```

```
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8LN55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q8LN55
                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q8LN55
                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                           à
                                                                                                                                                                         à
                                                                                                                                                                                                   d
                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ଟ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

STRAIN=CV. Columbia;

A Theologis A., Ecker J.R., Palm C.J., Federspiel N.A., Kaul S.,

A Theologis A., Ecker J.R., Palm C.J., Federspiel N.A., Kaul S.,

A Theologis A., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,

B Duenler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,

A Chung M. K., Conn L., Conway A.B., Conway A.R., Creasy T.H.,

Chung M. K., Con L., Conway A.B., Conway A.R., Greasy T.H.,

Chung M. K., Con L., Conway A.B., Conway A.R., Creasy T.H.,

Chung M. K., Con L., Johnson-Hopson C., Khan S., Khaykin E.,

A Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,

Kim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Lam B.,

Langin-Hooper S., Lee A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,

Langin-Hooper S., Liu Z.A., Luros J.S., Maiti R., Marziali A.,

Militscher J., Miranda M., Nguyen M., Nierman W.C., Coborne B.I.,

Pai G., Peterson J., Pham P.K., Rizzo M., Nacney T., Rowley D.,

Sak And H., Tallon L.J., Tambunga G., Toriumi M.J., Town C.D.,

Whu D., Yu G., Fraeer C.M., Venter J.C., Davis R.W.,

Saleure and analysis of chromosome I of the plant Arabidopsis
                                                                                            753
                                                                                                                IYMVLEYGEIDLAHMLSQKWREIEGSDRTIDENWLRFYWQQILQAVNTIHEERIVHSDLK 553
                              PANFLIVDGMLKLIDFGIANOMOPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKS
                                                KISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLK
                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana (Mouse-ear cress).
Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TAXID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 408:816-820(2000).
-!- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
EMBL; AC012193; AAG51619.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; ACULLIS, MORES AND AGENCY ASSENT.

GD; GO:0005524; F.ATP binding; IEA.

GO; GO:0004674; F.protein serine/threonine kinase activity; IEA.

GO; GO:0004674; F.protein serine/threonine kinase activity; IEA.

GO; GO:0006468; P:protein amino acid phosphorylation; IEA.

InterPro; IPR00019; Prot kinase.

InterPro; IPR008271; Ser_thr_pkinase.

InterPro; IPR008271; Ser_thr_pkin_AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProDom; rucocou, rac; 1.

SWART; SM0220; STRC; 1.

PROSITE; PS00107; PROTEIN KINASE ATP; 1.

PROSITE; PS00108; PROTEIN KINASE DOW; 1.

PROSITE; PS00108; PROTEIN KINASE ST; 1.

Hypothetical protein; ATP-binding; Kinase; Setine/threonine-protein kinase; Transferase.

770 AA: 80027 MW; F26A9A0B1C6D91DE CRC64;
                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                      720 AA
                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                         CCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                             KCLAWDRNQRWRIPELLQHPFL 693
                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00069; pkinase; I.
ProDom; PD000001; Prot_kinase; 1.
                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 17, C
(TrEMBLrel. 17, I
(TrEMBLrel. 25, I
                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                  Hypothetical protein.
                                                                                                                                                                                                                                                                                                   01-JUN-2001
01-JUN-2001
01-OCT-2003
494
                                                                                                                                                          754
                                                              554
                                                                                          694
                                                                                                                          612
                                                                                                                                                                                       672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      thaliana
                                                                                                                                                                                                                                                                    09CA22
                                                                                                                                                                                                                                      RESULT 9
                                                                                                                                                                                                                                                     Q9CA22
ID OS
                                                            셤
                                                                                            ò
                                                                                                                         g
                                                                                                                                                         ò
                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                     ö
```

Length 720;

DB 10;

Score 643;

Query Match

```
24;
                                                                                                                                                                                                                                                                      173
                                                                                                                                                                                                                                                                                                                                                                                                393
                                                             ----CKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVP 160
                                                                                                                                             161 LEMLETALRNLNLQKKQLLSEEEKKNLSASTVLTAQE----SFSGSLGHLQNRNNSC-D 214
                                                                                                                                                                                                                                                                                                                                                        501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280 VG-----SSIYGSDGQANARLPEELHTSVSSQPQKSDKHEKVASSKGPSAPRKRN 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330 YDPDLFFKVNGKLYQRLGKIGSGGSSEVHKVISSDCTIYALKKIKLKGRDYATAYGFCQE 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IAYLNKLQQHSDKIIRLYDYEITDQ-------YIYMVMECGNIDL 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        390 IGYLKKLKGKTN-IIQLIDYEVTDKTLLQEVLNGTMSNKDGRVKEDGFIYMVLEYGEIDL 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      594 NSWLKKK-----KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLK 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               449 AHMLSQKWREIEGSDRTIDENWLRFYWQQILQAVNTIHEERIVHSDLKPANFLLVRGFLK 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRIS 765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       567 CILYOMYYGRIPFADYKIFWAKFKVIIDPNHBIITYNQLSNPWLIDLMKKCLAWDRNQRWR 626
                                                                                                     83
                                                                                                                                                                       ----ISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNE
                                                                                          30 QRSQDVVTLSQSLAANTLTQDTTNNLAITSVAGESASITQPTVSEHFNPSDRQMDFGKSA
                                                                                                                                                                                                                               SRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNK-TKQSCPFGRVPVNLLNSPDCDVKTD
                                                                                                                                                                                                                                                       334 ITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  394 PELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PSCC----PSSKVSNILHPNKDATASEMPAŠTN---DPEVRVKETDTSKQQQITTGLEAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLG
                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SNANPHAVOSOGNL
                                                                                                                                                                                                                                                                                                                274 DSVVPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oryza sativa (japonica cultivar-group).
Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Ehrhartoideae, Oryzaea, Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   454 VVKNDFPPACQLSTPYGQP----ACFQQQQHQILATPLQNL---QVLASSSANEC-
                      Indels 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                          191 HSSSAPMLNAT-----THVSRSYVEAD------
Pred. No. 1.2e-32;
9; Mismatches 242;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                      66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-0CT-2002 (TEMBLrel. 22, C. 01-0CT-2003 (TEMBLrel. 25, Le Hypothetical protein. 05/NBA0004G17,15.
    28.1%;
                                                             107 QEPDDARDYFOMARAN-
                      205; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPELLQHPFL 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN=cv. Nipponbare;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=39947;
                                                                                                                                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                        174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        904
```

```
RESULT 11
Q9VEH1
                                                     308 LRNLKSVQNSHFKEPLVSDEKSSELIITDSITL--------KNKTESSLLA-K 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118 LRNAAPDQN----KAVVSSQ--DELLLTTPLTLGTITDTHDQNGGQNHQPKSDTDLLVDR 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   394 PELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTP 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----YIYMVMECGNIDL----NSWLKKKKS---ID 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENWLRFYWQQMLKAVNTIHEERIVHSDLKPANFLLVRGALKLIDFGIAKAIMNDTTNIQR 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TIOSKSAAQIDOYASPAOMPOCGRESSGVSGHGSOKLHGVAMNHADCNTNKQQVDTNGGM 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---ISVKGRIYSI 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345 DKPVSSSAVCLPSQGLSGNDQSLSAKDDGAPRSKVEKECRKKNYDPDVFFKVNGKLYQK 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEBADNQTLDSYRNEIAYLNKLQQHSDKIIR 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGKIGSGGSSEVHKVISAECTIYALKKIKLKGRDYPTAYGFCQEIEYLNKLKGKSN-IIQ 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PWERKSYWKNWLEAVHIIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTISVVK 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQ 724
Buell C.R., Yuan Q., Ouyang S., Liu J., Gansberger K., Jones K.M., Overton II L.L., Tsitrin T., Kim M.M., Bera J.J., Jin S.S., Padeson D.W., Tallon L.J., Kom H., Zismann V.J., Jin S.S., A vancken S.S., Riedmuller S.B., Utterback T.T., Feldblyum T.V., Yang Q.Q., Haas B.J., Fraser C.M., Quackenbush J., White O., Salzberg S.L., Fraser C.M., Quackenbush J., White O., Salzberg S.L., Fraser C.M., Quackenbush J., Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.

E. Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.

R GMS-2002) to the EMBL/GenBank/DDBJ databases.

R GO: GO:0005524; F:ATP binding; IEA.

GO: GO:0004713; F:protein-tyrosine kinase activity; IEA.

GO: GO:0004713; F:protein-tyrosine kinase activity; IEA.

GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

R GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

R GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

R GO: GO:0006740; F:protein-tyrosine kinase activity; IEA.

R GO: GO:0006719; F:protein-tyrosine kinase.

R InterPro: IPRO02290; Ser_thr_pkinase.

R InterPro: IPRO02291; Ser_thr_pkinase.

R InterPro: IPRO02291; F:Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         172 KKSSMEVSSSQWASANALVGEDFKKDLFYLTSDPQLTSQTGDNFPVAQVADDQGKNHKEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                232 GIASAAVEMDIKY-----DAANLSRRIDEACDQNHGEPMTRCSAMGSSV--TAVSLYSGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IOMHNSS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  725 ISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10; Length 742;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  352 LEETKEYQEPEVPESNQKQWQAKRK------SECINQNPAA-
                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00107; PROTEIN KINASE ATP; 1.
PROSITE; PS50011; PROTEIN KINASE DOM; 1.
PROSITE; PS00108; PROTEIN KINASE ST.
PROSITE; PS00108; PROTEIN KINASE ST.
PROSITE; PS00108; PROTEIN KINASE ST.
SEQUENCE 742 AA; 82100 MW; 0C9EBC560E282126 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            454 VVKNDFPPAC-QLSTPYGQPACFQ------QQQHQI---
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ,9e-32;
nes 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----SSSANEC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                       14.6%; Score 637.5; 30.6%; Pred. No. 2.96
                                                                                                                                                                                                                                                                                    Pfam; PF00069; pkinase; I.
Prochom; PD000001; Proc. kinase; I.
SMART; SM00219; TKC; 1.
SMART; SM00219; TYRC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LYDYEITDQ------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Sim:
Matches 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           665
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
RC STRAIN=Berkeley.

REALINE=20196006; PubMed=10731132;

REALINE=20196006; PubMed=10731132;

RADINE=20196006; ubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=2019606; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=10731132;

RADINE=20196; PubMed=1073132;

RADINE=20196; PubMed=1073132;

RADINE=20196; PubMed=1073133;

RADINE=20196; PubMed=1073133;

RADINE=20196; PubMed=1073133;

RADINE=20196; PubMed=1073133;

RADINE=20196; PubMed=107313;

RADINE=20196; PubMed=1073133;

RADINE=20196; PubMed=107313;

RADINE=2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=Berkley;
Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J.,
Stapleton M., Chavez C., Dorsett V., Dresnek D., Farfan D., Frise E.,
George R., Gonzalez M., Guarin H., Kronmiller B., Li P., Liao G.,
Miranda A., Mungall C.J., Nunco J., Pacleb J., Paragas V., Park S.,
Patel S., Phouanenavong S., Wan K., Yu C., Lewis S.E., Rubin G.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (AUG-2003) to the EMBL/GenBank/DDBJ databases.
-1. SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
EMBL; AED03718; AAF25450.1; -.
EMBL; BT010086; AAQ22555.1; -.
                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.
                                                                                                                   Last sequence update)
Last annotation update)
630
                                                                                Created)
                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit fly).
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; BT010086; AAQ22555.1; -.
HSSP; QO0534; LBT.
Flybase; FBGM038534; CG7643.
GO; GO:0005524; F:ATP binding; IBA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 287:2185-2195(2000).
                                                                       01-MAY-2000 (TrEMBLrel, 13, 01-MAY-2000 (TrEMBLrel, 13, 01-OCT-2003 (TrEMBLrel, 25,
                                                                                                                                                                                                        CG7643 protein (LD04521p). CG7643.
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Celniker
```

us-10-081-119-14.rspt

```
71 SKOOOITTGLEAPVG-----SSIYGSDGQANRRLPEELHTSVSSQPQKSDKHEKV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ASSSANEC-----ISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GRDYATAYGFQQEIGYLKKLKGKTN-IIQLIDYEVTDKTLLQEVLNGTMSNKDGRVKEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240 FIYMVLEYGEIDLAHMLSQKWREIEGSDRTIDENWLRFYWQQILQAVNTIHEERIVHSDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300 KPANFLLVRGFLKLIDFGIAKAINSDTTNIQRDSQVGTLSYMSPEAFM-CNESDENGNT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       381 NONPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLQNL------QVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KPANFLI VDGMLKLI DFGI ANQMQPDTTSVVKDSQVGTVNYMPPEA I KDMSSSRENGKSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIBFPDIPEKDLQDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358 IKCGRPSDIWSLGCILYQMVYGRTPFADYKTFWAKFKVITDPNHEITYNQLSNPWLIDLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NANPHAVQSQGNLPSCC----PSSKVSNILHPNKDATASEMPASTN---DPEVRVKETDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               581 YIYMVMECGNIDLNSWLKKK-----KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDL
                                                                                                                                                  Arabidopsis Cialiana (Mouse-ear Cress).
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta;
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, rosids,
Eurosids II, Brassicales, Brassicaceae, Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         543 EADNOTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ----
                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14.4%; Score 628; DB 10; 35.9%; Pred. No. 7.1e-32; ive 63; Mismatches 153;
                                                                                     Arabidopsis thaliana (Mouse-ear cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KCCLKRDPKQRISIPELLAHPYV 775
                 (TrEMBLrel. 03, (TrEMBLrel. 03, (TrEMBLrel. 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 35.98
                                                           Hypothetical protein
                                                                                                                                           NCBI_TaxID=3702;
                 01-MAY-1997
01-MAY-1997
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Simi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                               26;
                                                                                                                                                                                                                                                                                                202
                                                                                                                                                                                                                                                                                                                           114
                                                                                                                                                                                                                                                                                                                                                                                 174
                                                                                                                                                                                                                                                                                                                                                                                                             286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                464
                                                                                                                                                                                                                                                                    54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TKSDVWSLGCILYLLYQKTPFGHIRNVYAKMSAITTPGTSIEYPAIPPYYPIMLVHWAK
                                                                                                                                                                                                                                                                                                153 AVERGAVPLEMLEIALRNINLQKKQLISEEEKKN-----LSASTVLTAQESFSGS--
                                                                                                                                                                                                                                                                                                                ENEPHPLPINMLPRRVSELTWMDSDSDEEDIKSNHNLNCAILNDSFVLSPSQELTNSNSN
                                                                                                                                                                                                                                                                                                                                                       TTKARFLY
                                                                                                                                                                                                                                                                                                                                                                                115 ITTRRIPSAAPLKQSDSNLSFLGRFNDMGINCSSQGSPVANSEKQVAKKTAPTLQAAPSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                406 HTTFEQPVFSVS-KQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----VFRESDKDNVPDKVDN-VEPKELVSIPA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LSTPYGOPACFOOOQHQILATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VAVPPEQP-----STATIDKKLGCGGSSSVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IYMVMECGNIDLNSWLKKKKSIDP-WERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPBAIKDMSSS-----RENGKSKSKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGRLKLIDFGIASNIAVDSTSIIKFSQAGTFNYISPEALTDTSTGNSPMRRADQPKIKIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDVLK
                                                                                                                                                                                                                                        99 RFAELKAIQEPDDARDYF------QMARANCKKFAFVHISFAQFELSQGNVKKSKQLLQK
                                                                                                                                                                                                                                                                    RIKDMMALGLDSDSEDDFNTPYRPRQAAGERKQOPV----ASFQV-----OIRGK
                                                                                                                                                                                                                                                                                                                                                                                                            GENMPPODABIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - PQVRII---GSTLAGKSRSAVSNDFRAQKVLFQTPMTVSRAAP--VASDSISF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASS-NHWQIPELARKVNTEQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QV-LNEKKQ1YA1KYVNLEEADNQTLDSYRNEIAYLNKLQQHSDK11RLYDYB1T--DQY
                                                                                                                                            Transferase
                                                                                                                                                                                                                                                                                                                                                                                                                                      175 TERRPLÓETETPLRNELPSTSKTK--------PDADFIT-----
GO; GO:0004674; F:protein serine/threonine kinase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
InterPro; IPR000719; Prot kinase.
InterPro; IPR008271; Ser thr.pkin_AS.
Pfam; PF00009; pkinase; 1.
Probom; PR000001; Prot kinase; 1.
PROSITE; PS00107; PROTEIN KINASE ATP; 1.
PROSITE; PS00101; PROTEIN KINASE DOM; 1.
PROSITE; PS00108; PROTEIN KINASE DOM; 1.
ATP-binding; Kinase; Serine/threonine-protein kinase; Transferasi SEQUENCE 630 AA; 69753 MW; C9CA571281A1F25E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLCDTITES-----PDIPEPPKKAEPPK-----SQHPSKKSLDH----
                                                                                                                                                                                 14.6%; Score 637; DB 5; Length 63
28.8%; Pred. No. 2.5e-32;
ive 97; Mismatches 231; Indels
                                                                                                                                                                                                                                                                                                                                                       - LGHLQNRNNSCDSRGQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCLOLNPKKRPSCTELLOYPFHMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCLKRDPKQRISIPELLAHPYVQI
                                                                                                                                                                                                          , 64;
                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                Similarity
                                                                                                                                                                                                 Best Local Simi
Matches 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   287
                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                591
                                                                                                                                                                                                                                                                                                                                                     203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     754
                                                                                                                                                                                    Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
P93833
ID P93833
                                                                                                                                                                                     Query
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
```

440

Gaps

493

542

```
01-OCT-2001 (TrEMBLrel. 18, 01-OCT-2001 (TrEMBLrel: 18, 01-OCT-2003 (TrEMBLrel. 25,
                                                                                                                                               Genome Biol. 0:0-0(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 103; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                   SEQUENCE FROM N.A.
                                                                                                                                      annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 098830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
Q98S30
硆
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   498 ANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIA 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SERIIIKGREIEILKQIGKGGSSKVYKVL-FGSNVYALKRVEL-IGDEKMLSSYINEIN 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   558 YLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLE 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPE 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 394 IVXRVHIERIIHCDLKPANFLFVKGRVKLIDFGISKVIRNDTTSILSEEQCGTVNYMSPE 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |-----QNKSKVARSSDIWSLGCILYEMVHSNPPLHEYPNLIQKIQRLQEYS-E 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHE 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                         L Nature 414:450-453(2001).

R RDL; AL590442; CAD25082.1; -
R GO; GO:000524; F:ATP binding; IEA..
R GO; GO:0004674; F:protein serine/threonine kinase activity; IEA.
R GO; GO:0016740; F:protein serine/threonine kinase activity; IEA.
R GO; GO:0016648; P:protein amino acid phosphorylation; IEA.
R GO; GO:006648; P:protein amino acid phosphorylation; IEA.
R InterPro; IPR008271; Ser_thr.pkin.AS.
R InterPro; IPR008271; Ser_thr.pkin.AS.
R Probom; PD00069; pkinase; 1.
R PROSITE; PS001007; Prot_kinase; 1.
R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
R PROSITE; PS00101; PROTEIN KINASE DOM; 1.
R PROSITE; PS00108; PROTEIN KINASE DOM; 1.
                                                                                 Encephalitozoon cuniculi.
Eukaryota, Fungi, Microsporidia, Unikaryonidae, Encephalitozoon.
NCBI_TaxID=6035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                    Katinka M.D., Duprat S., Cornillot E., Metenier G., Thomarat F. Prensier G., Barbe V., Peyretaillade E., Brottier P., Wincker F. Delbac F., El Alaoui H., Peyret P., Saurin W., Gouy M., Weissenbach J., Vivares C.P.; "Genome sequence and gene compaction of the eukaryote parasite Encephalitozoon cuniculi.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.5%; Score 501.5; DB 5; Length 586; 41.7%; Pred. No. 9.9e-24; ive 51; Mismatches 96; Indels 15
                                                                                                                                                                        Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66975 MW; CBE4BA154FBBBB6A CRC64;
                      01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
MPS1-like THR/TYR dual specificity protein kinsse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     738 IEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FXYTS-KNKAAVMVMKECLARDPKKRPTIDNLLNHRFL
586 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                        MEDLINE=21576510; PubMed=11719806;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22,
22,
25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 2 (TrEMBLrel. 2 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        586 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                STRAIN=GB-M1;
                                                                                                                                                                                                             STRAIN=GB-M1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q8LA38
Q8LA38;
01-OCT-2002 (
01-OCT-2002 (
01-OCT-2003 (
                                                                         0510.
                                                          MPS1-like
ECU02 0510
                                                                                                                                                               Genoscope;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8LA38
ID Q8
AC Q8
DT 01
DT 01
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
```

```
ñ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 DIKPANFILIVRGFIKLIDFGIAKAINSDTTNIQRDSQVGTLSYMSPEAFM-CNESDENGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       631 DLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPBAIKDMSSSRENGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                579 DQYIYMVMECGNIDLNSWLKKK-----KSIDPWERKSYWKNMLEAVHTIHQHGIVHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           691 SKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHBIBFPDIPEKDLQD
Hypothetical protein.
Arabidopsis thaliana (Mouse-ear cress).
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
eurosids II, Brassicales; Brassicaceae; Arabidopsis.
NCBI_TAXID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Penny S., Deng L.T.,
                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                           ż
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 297;
                                                                                                                                                                                         Haas B.J., Volfovsky N., Town C.D., Troukhan M., Alexandrov Feldmann K.A., Flavell R.B., White O., Salzberg S.L.; "Full-length messenger RNA sequences greatly improve genome
                                                                                                                                                                                                                                                                                                                                              ď.
                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
Brover V., Troukhan M., Alexandrov N., Lu Y.-P., Flavell
Feldmann K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEGMI, PF00069; pkinase; I. Professions Pr00069; pkinase; I. Pr0006n; PD000001; Prof. kinase; I. PR0517: SM0210; S. TKC; I. PR051TE; PS50011; PR0TEIN KINASE_DOM; I. PR051TE; PS00108; PR0TEIN KINASE_ST; Hypothetical protein; ATP-binding; Transferase. SEQUENCE 297 AA; 34366 MW; A07227F30444D5E0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Guillardia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-0CT-2001 (TrEMBLrel: 18, Last sequence update) 01-0CT-2003 (TrEMBLrel: 25, Last annotation update) Hypothetical protein kin from chromosome 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.2%; Score 490; DB 10; 50.2%; Pred. No. 2.1e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDILNE=21223349,
MEDILNE=21223349,
Douglas S., Zauner S., Fraunholz M., Beaton M.,
Wu X., Reith M., Cavalier-Smith T., Maier U.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ŗ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KĪN.
ulullardia theta (Cryptomonas phi).
Bukaryota, Cryptophyta, Cryptomonadaceae;
NCBI_TaxID=5529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 189 LMKKCLAWDRNQRWRIPELLQHPFL 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   751 VLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
```

```
497 SANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSY-RNE 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     556 IAYLNKLQQHSDKIIRLYDYE--ITDQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWK 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          614 NML-----EAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQV 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      370 KLLCLQIADAVNLLHSEKIVHSDLKPSNFMFIKKSLKIIDFGISHEIYVNRSNISREIQ1 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                669 GTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKL 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260 SYSDLLLINGVIYIKICLIAKGGSGKVYKIIDQNKKIFALKKIKI----NQNNKNFCLKE
                                                                                            R PON 12 1901321, F190132.

R GO; GO:0005524; F134TP binding; IEA.

GO; GO:0004674; F19rotein serine/threonine kinase activity; IEA.

GO; GO:0004674; F19rotein serine/threonine kinase activity; IEA.

GO; GO:000468; P19rotein amino acid phosphorylation; IEA.

INTERPO: IPR003016; Lipoyl_BS.

INTERPO: IPR003016; Lipoyl_BS.

INTERPO: IPR003016; Lipoyl_BS.

R PROMOF, PR000001; Prot Kinase.

R PROSTIE; PS0018; LIPOYL; I.

R PROSTIE; PS0018; LIPOYL; I.

R PROSTIE; PS0018; ROTEIN KINASE_DOM; I.

R PROSTIE; PS00108; PROTEIN KINASE_ST; KHOTHEIN KINASE_ST;

M Hypothetical protein; ATP-Dinding; Kinase;

SEQUENCE 536 AA; 64446 WW; 489D25903C64CE8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21; Gaps
                  Nature 410:1091-1096(2001).
-!- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
EMBL; AF083031; AAK39750.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10; Length 536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     729 HAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQI 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            487 QIITDKLDHLIFPKNSDSLLNDLIKFCLRKDPNLRILINEILKHPFFDV 535
"The highly reduced genome of an enslaved algal nucleus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 9.9%; Score 434.5; DB 10; Length Best Local Similarity 33.9%; Pred. No. 1.6e-19; Matches 98; Conservative 69; Mismatches 101; Indels
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

Search completed: September 29, 2004, 16:20:43 Job time : 144 secs

This Page Blank (uspto)

```
RESULT 1
                                                                                                                                                                                        September 29, 2004, 16:16:51; Search time 144 Seconds (without alignments) 1879.397 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                         US-10-081-119-14
4376
1 MNKVRDIKNKFKNEDLTDEL......GGESHNSSSSKTFEKKRGKK 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Published Applications AA:*

1: /cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.ppp:*

2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*

3: /cgn2_6/ptodata/2/pubpaa/NSO6_NEW_PUB.pep:*

4: /cgn2_6/ptodata/2/pubpaa/USO6_NEW_PUB.pep:*

5: /cgn2_6/ptodata/2/pubpaa/USO6_NEW_PUB.pep:*

6: /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*

7/cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*

8: /cgn2_6/ptodata/2/pubpaa/NSO8_NEW_PUB.pep:*

9: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

11: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

11: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

13: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

14: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

15: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

16: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

17: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

16: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

17: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

18: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*

19: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1351062 seqs, 321799191 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0 Maximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                   Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	rddw '#' pomphag		Seguence 2, Appli	Sequence 16, Appl	Sequence 804, App	Sequence 833, App	Seguence 865, App	Sequence 30, Appl	Sequence 482, App	Sequence 34, Appl		Sequence 32, Appl	Sequence 201272,	Sequence 273093,	Sequence 43102, A
111111111111111111111111111111111111111	#T-6TT-T00-0T-50	US-10-116-712-666	US-10-353-690-2	US-10-366-288-16	US-10-295-027-804	US-10-295-027-833	US-10-295-027-865	US-10-354-358-30	US-10-295-027-482	US-10-173-999-34	US-10-664-421-157	US-10-081-119-32	US-10-437-963-201272	US-10-424-599-273093	US-10-425-114-43102
	1 '	14	15	15	15	15	15	14	15	15	16	14	16	12	12
1 6	1 40	841	841	841	841	841	841	857	857	857	367	678	742	730	399
1 0	O . O O T	100.0	100.0	100.0	100.0	100.0	100.0	100.0	6.66	6.66	44.1	15.4	14.6	14.3	14.0
	40,0	4376	4376	4376	4376	4376	4376	4376	4373	4373	1929	673.5	637.5	627	614
1 -	٦.	7	ო	4	Ŋ	9	7	œ	σ	10	11	12	13	14	15
		4376 100.0 841 14 US-10-081-119-14 Sequence	4376 100.0 841 14 US-10-081-119-14 Sequence 4376 100.0 841 14 US-10-116-712-666 Sequence	4376 100.0 841 14 US-10-081-119-14 Sequence 4376 100.0 841 14 US-10-16-712-666 Sequence 4376 100.0 841 15 US-10-353-690-2 Sequence	4376 100.0 841 14 US-10-081-119-14 Sequence 14, Sequence 666 100.0 841 14 US-10-116-712-66 Sequence 6 66 4376 100.0 841 15 US-10-353-690-2 Sequence 2, 4376 100.0 841 15 US-10-366-288-16 Sequence 16,	4376 100.0 841 14 US-10-081-119-14 Sequence 14, 4376 100.0 841 14 US-10-16-16-16-16-16-16-16-16-16-16-16-16-16-	4376 100.0 841 14 US-10-081-119-14 Sequence 14, 84376 100.0 841 14 US-10-16-16-16-16-16-16-16-16-16-16-16-16-16-	4376 100.0 841 14 US-10-081-119-14 Sequence 14, 4376 100.0 841 14 US-10-10-166 Sequence 2, 4376 100.0 841 15 US-10-313-690-2 Sequence 2, 4376 100.0 841 15 US-10-356-288-16 Sequence 16, 4376 100.0 841 15 US-10-256-027-804 Sequence 834 4376 100.0 841 15 US-10-295-027-803 Sequence 835 (4376 100.0 841 15 US-10-295-027-883 Sequence 835 (4376 100.0 841 15 US-10-295-027-883 Sequence 855 (4376 100.0 841 15 US-10-295-027-885 Sequence 855 (4376 100.0 841 15 US-10-295-027-885 Sequence 855 (4376 100.0 8	4376 100.0 841 14 US-10-081-119-14 Sequence 14, 4376 100.0 841 14 US-10-16-16-16-16-16-16-16-16-16-16-16-16-16-	4376 100.0 841 14 US-10-081-119-14 Sequence 14, 4376 100.0 841 14 US-10-166 Sequence 2, 8quence 6, 4376 100.0 841 15 US-10-366-288-16 Sequence 2, 8quence 16, 4376 100.0 841 15 US-10-366-288-16 Sequence 16, 4376 100.0 841 15 US-10-295-027-804 Sequence 833 4376 100.0 841 15 US-10-295-027-865 Sequence 865 Sequence 865 84376 100.0 841 15 US-10-295-027-865 Sequence 865 84376 100.0 841 15 US-10-295-38-38-30 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-485 Sequence 865 84378 100.0 841 15 US-10-295-027-485 Sequence 865 84378 100.0 841 15 US-10-295-027-485 Sequence 865 84378 100.0 841 15 US-10-295-027-485 Sequence 865 84378 100.0 841 15 US-10-295-027-485 Sequence 865 84378 100.0 841 15 US-10-295-027-485 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 15 US-10-295-027-865 Sequence 865 84378 100.0 841 10	4376 100.0 841 14 US-10-011-119-14 Sequence 14, 4376 100.0 841 14 US-10-116-712-66 Sequence 6.6, 4376 100.0 841 15 US-10-353-690-2 Sequence 2, 4376 100.0 841 15 US-10-359-027-804 Sequence 16, 84376 100.0 841 15 US-10-295-027-804 Sequence 804, 4376 100.0 841 15 US-10-295-027-865 Sequence 805, 84376 100.0 841 15 US-10-295-027-865 Sequence 805, 84378 100.0 857 14 US-10-295-027-865 Sequence 805, 84373 99.9 857 15 US-10-173-999-34 Sequence 34, 8473	4376 100.0 841 14 US-10-081-119-14 Sequence 1666, 4376 100.0 841 14 US-10-116-712-666 Sequence 666, 4376 100.0 841 15 US-10-353-690-2 Sequence 16, 4376 100.0 841 15 US-10-355-027-804 Sequence 16, 4376 100.0 841 15 US-10-295-027-804 Sequence 803, 4376 100.0 841 15 US-10-295-027-804 Sequence 803, 4376 100.0 841 15 US-10-295-027-865 Sequence 805, 4376 100.0 857 15 US-10-354-588-30 Sequence 30, 4378 99.9 857 15 US-10-354-588-30 Sequence 30, 1929 44.1 367 16 US-10-664-421-157 Sequence 154,	4376 100.0 841 14 US-10-081-119-14 Sequence 666, 4376 100.0 841 15 US-10-116-712-666 Sequence 2, A 4376 100.0 841 15 US-10-353-690-2 Sequence 16, 84376 100.0 841 15 US-10-295-027-804 Sequence 16, 4376 100.0 841 15 US-10-295-027-864 Sequence 865, 84376 100.0 841 15 US-10-295-027-865 Sequence 865, 84376 100.0 857 14 US-10-354-358-30 Sequence 865, 84378 99.9 857 15 US-10-295-027-482 Sequence 865, 84373 99.9 857 15 US-10-295-027-482 Sequence 482, 84373 99.9 857 15 US-10-295-027-482 Sequence 34, 1929 44.1 367 16 US-10-135-328-34 Sequence 35, 850-35-35-35-35-35-35-35-35-35-35-35-35-35-	4376 100.0 841 14 US-10-081-119-14 Sequence 14, 876 100.0 841 14 US-10-16-66 Sequence 2, 84376 100.0 841 15 US-10-353-690-2 Sequence 2, 84376 100.0 841 15 US-10-35-027-804 Sequence 16, 84376 100.0 841 15 US-10-35-027-804 Sequence 804 4376 100.0 841 15 US-10-295-027-804 Sequence 804 4376 100.0 841 15 US-10-295-027-805 Sequence 805 4376 100.0 841 15 US-10-295-027-805 Sequence 805 4373 99.9 857 15 US-10-295-027-482 Sequence 43, 84373 99.9 857 15 US-10-173-999-34 Sequence 34, 84373 99.9 857 15 US-10-173-999-34 Sequence 35, 8673-5 15-4 678 14 US-10-064-421-157 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 15-4 678 14 US-10-081-119-32 Sequence 32, 8673-5 16-6 16-6 16-6 16-6 16-6 16-6 16-6 16	4376 100.0 841 14 US-10-081-119-14 Sequence 666, 4376 100.0 841 14 US-10-116-712-666 Sequence 666, 4376 100.0 841 15 US-10-366-288-16 Sequence 16, 4376 100.0 841 15 US-10-355-027-804 Sequence 16, 4376 100.0 841 15 US-10-295-027-804 Sequence 803, 4376 100.0 841 15 US-10-295-027-804 Sequence 803, 4376 100.0 841 15 US-10-295-027-865 Sequence 805, 4376 100.0 857 15 US-10-354-588-30 Sequence 30, 4373 99.9 857 15 US-10-354-588-30 Sequence 34, 1929 44.1 367 15 US-10-644-421-157 Sequence 157, 5637.5 15.4 678 14 US-10-664-421-157 Sequence 273, 637.5 14.6 778 12 US-10-437-992-201272 Sequence 273, 627.5 14.6 730 12 US-10-437-992-201272 Sequence 273, 5637.5 14.6 730 12 US-10-437-992-201272 Sequence 273, 5637.5 14.6 730 12 US-10-437-992-201272 Sequence 273, 5630-666-273, 5630-666-273, 5630-676-273, 563

Sequence 3040, Ap Sequence 5040, Ap Sequence 30, Appl Sequence 1955, Appl Sequence 1710, Ap Sequence 183, Appl Sequence 183, Appl Sequence 183, Appl Sequence 185, Appl Sequence 99, Appl Sequence 99, Appl Sequence 96, Appl Sequence 96, Appl Sequence 96, Appl Sequence 96, Appl Sequence 96, Appl Sequence 160, Appl Sequence 161, Appl Sequence 161, Appl Sequence 151, Appl Sequence 151, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 161, Appl Sequence 261, Appl Sequence 261, Appl Sequence 261, Appl Sequence 261, Appl Sequence 162, Appl Sequence 161, Appl Sequence 162, Appl Sequence 161, Appl Sequence 261, Appl Sequence 161, Appl Sequence 261, Appl Sequ	13,
######################################	9-515-806-1
44.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	
F. 9 F F R W W W W W W W W W W W W W W W W W	23
4448644444444444444444	
88	319
, 111112233333334444444444444444444444444	45

						0	60	90	120	120	180	180
US-10-081-119-14 ; Sequence 14, Application US/10081119 ; Publication No. US20030045491A1 ; GENERAL INPORMATION: ; APPLICANT: Reinhard, Christoph ; APPLICANT: Uefferson, Anne B. ; APPLICANT: Cheston, Anne B.	NVENTION NVENTION ENCE: 16	CURRENT FILING DATE: 2002-02-21; PRIOR APPLICATION NUMBER: 60/289,813; PRIOR FILING DATE: 2001-02-21	; NUMBER OF SEQ ID NOS: 38 ; SOFTWARE: FastSEQ for Windows Version 4.0.) SECTION 14 	-14	Query Match Best Local Similarity 100.0%; Scoc. 4376; DB 14; Length 841; Matches 841; Conservative 0; Mismatches 0; Indels 0; Gaps	QY 1 MNKVRDIKNKFKNEDLIDBLSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS 60	Db 1 MKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLKLEKNS 60	Qy 61 VPLSDALLNYLIGRYSQAIEALPPDKYGQNESFARIQYRFABLKAIQEPDDARDYFQMAR 12	Db 61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFGWAR 12	Qy 121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNIALQKKQLLS 18	Db 121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 16

300 360

120 180 180 240 240

9 9 360

420 420 480 480 540 540 600

009

999 9

```
QILATPLONLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 540
                                                                                                                                                                                                                                                                            541 LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYWVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                           SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKKISPKSDVWSLGCILYYMTYGKTPFQQ 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721 IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVNOMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
               PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                          PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                               QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                   LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                KSIDEWERKSYWKUMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                       KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Sequence 16, Application US/10366288; Publication No. US20030216288A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT
; ORGANISM: Homo Sapien
US-10-366-288-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841 K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         - 🔀
                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                     601
                                      361
                                                                               421
                                                                                                                                                                481
                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                          d
                                                                                                                                                  ò
                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                     \stackrel{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                        \delta
                                                                                                                                                                                                                                               \delta
                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
## APPLICANT: Stagliano, Nancy ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin Jacquelin ## APPLICANT: Percedin ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding ## APPLICANT: Perceding 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NSLRQTWXTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLBETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 VPLSDALLNKLIGRYSQAIBALPPDKYGQNBSFARIQVRFAELKAIQBPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLKKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 VPLSDALLNKLIGRYSQAIBALPPDKYGQNESFARIQVRFAELKAIQBPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEQPVFSVSKOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5; DB 15; Length 841; 2.4e-299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 4376;
100.0%; Pred. No. 2.4
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.
Matches 841; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Homo Sapiens
US-10-353-690-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     С
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                ö
                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                     EEEKKNLSASTVITAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR 240
                                                                                                                          61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEFDDARDYFQMAR 120
                                                                                                                                                  61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                      ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 180
                                                                                                                                                                                                        121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 180
                                                                                                                                                                                                                                                                                                             NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                              NSLRQINKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                                                                       SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                            SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                     PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 PEVPESNOKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTFFEQPVFSVSKQS 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QILATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541 LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMBCGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IINQISKLHAIIDPNHBIBFPDIPBKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781 PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
                                                               09
                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601 KSIDPWERKSYWRNWLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKKKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                  EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                               1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                  MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                  Gaps
                                ;
0
   841;
 Length
                                  Indels
100.0%; Score 4376; DB 15; 100.0%; Pred. No. 2.4e-299; ive 0; Mismatches 0;
 DB 15;
                 Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             K 841
 Query Match
Best Local Simi
Matches 841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
US-10-295-027-804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                      121
                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                        6
                                                                                                                                                g
                                                                                                                                                                                 ઠે
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                6 B
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

Sequence 804, Application US/10295027 Publication No. US20030232350A1 GENERAL INFORMATION:

APPLICANT: Afar, Daniel APPLICANT: Aziz, Natasha APPLICANT: Ginsberg, Wendy M.

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 VPLSDALLNKLIGRYSQAIBALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                        APPLICANT: Marray, Richard H.
APPLICANT: Marray, Richard H.
APPLICANT: Matson, Susan R.
APPLICANT: Matson, Susan R.
APPLICANT: Ess Biotechnology, Inc.
TITLE OF INVENTION: Methods of Diagnosis of Cancer, Compositions and TITLE OF INVENTION: Methods of Screening for Modulators of Cancer CURRENT FILING DATE: 2002-11-13
FILE REFERENCE: 018501-01250015
CURRENT PILING DATE: 2000-09-15
PRIOR PELLOGATION NUMBER: US 09/663,733
PRIOR PELLOGATION NUMBER: US 60/335,394
PRIOR PELLOGATION NUMBER: US 60/332,464
PRIOR APPLICATION NUMBER: US 60/332,464
PRIOR APPLICATION NUMBER: US 60/332,464
PRIOR APPLICATION NUMBER: US 60/334,393
PRIOR PELLING DATE: 2001-11-21
PRIOR APPLICATION NUMBER: US 60/344,393
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-11-21
PRIOR PELLING DATE: 2001-10-08
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-02-13
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-02-13
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-02-13
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 2002-01-10
PRIOR PELLING DATE: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 ANCKKFAFVHISFAQFELSGGNVKKSKQLLQKAVERGAVPLEMLEIALENLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGNDSCELRNIKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEVPESNOKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTIFEQPVFSVSKOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MNKVRDIKNKFKWEDLIDELSINKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 VPLSDALLNKLIGRYSQAIBALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANCKKFAFVHI SFAQFEL SQGNVKKSKQLLQKAVERGAVPLEMLE I ALRNINLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 EEEKKULSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 NSERĞTNKTKÇSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRÇTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MNKVRDIKNKPKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tch 100.0%; Score 4376; DB 15; al Similarity 100.0%; Pred. No. 2.4e-299; 841; Conservative 0; Mismatches 0;
Gish, Kurt C.
Glynne, Richard
Hevezi, Peter A.
Mack, David H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
// ORGANISM: Homo sapiens
US-10-295-027-804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S:
Matches 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \dot{\delta}
```

o;

g

g ઠે d ò g

ò g δ g ò g ò 원

ò

```
180
                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEVPESNOKOWQAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEQPVFSVSKOS 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                 61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541 LEBADNQTLDSYRNBIAYLNKLQQHSDKIIRLYDYBITDQYIYMVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IINQISKLHAIIDPNHEIBFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                           09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFWKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VPLSDALLNKLIGRYSQAIBALPPDKYGQNESFARIQVRFABLKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPPQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                                                                                                                                                                                                                                                                                                                                              ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                 1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                        1 MNKVRDIKNKFKNEDLIDELSINKISADITDNSGTVNQIMMMANNPEDWLSILLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KSIDPWERKSYWKNMLEAVHTHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                   Gaps
      PALM.
                                                                                                                                                                                                                 ·
0
                                                                                                                                                                          Length 841;
      or
Remaining Prior Application data removed - See File Wrapper, NUMBER OF SEO ID NOS: 1386
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 833
LENGTH: 841
TYPE: PR
TYPE: PR
ORGANISM: Homo sapiens
US-10-295-027-833
                                                                                                                                                                                                                   Indels
                                                                                                                                                                            Score 4376; DB 15;
Pred. No. 2.4e-299;
; Mismatches 0;
                                                                                                                                                                            Query Match
Best Local Similarity 100.0%; P. Matches 841; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                 009
                                                                                                                                                                                                                                      099
                                                                                  540
                                                                                                                       540
                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                           480
                                                                                                                                                                                                                                                                         KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT 660
                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                            IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVNOMAKGTTEEMKYVLGOLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Publication No. US2003023350A1
GENERAL INFORMATION:
APPLICANT: Aziz, Natasha
APPLICANT: Aziz, Natasha
APPLICANT: Ginsbray Wendy M.
APPLICANT: Ginsbray Wendy M.
APPLICANT: Ginsbray Wendy M.
APPLICANT: Ginsbray Wendy M.
APPLICANT: Ginsbray Bichard
APPLICANT: Marca, Peter A.
APPLICANT: Marca, Peter A.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT: Watson, Susan R.
APPLICANT PRING DATE: 2002-10.13
PRIOR APPLICATION NUMBER: US 60/335,394
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-29
PRIOR FILING DATE: 2001-11-29
PRIOR FILING DATE: 2001-11-29
PRIOR FILING DATE: 2002-01-10
PRIOR PRIOR APPLICATION NUMBER: US 60/347,319
PRIOR PRIING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-01-10
PRIOR FILING DATE: 2002-02-03
                                                                                                                                                                                                                                                                                                                                        SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                  SVVKDSQVGTVNYMPPEAIKDMSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                PEISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                  QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVPQVLNEKKQIYAIKYVN
                                                                                                          QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                            LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                               LEEADNOTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                      KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                    IINQISKLHAIIDPNHEIBFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PVNOMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
      PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-295-027-833
Sequence 833, Application US/10295027
Publication No. US20030232350A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  K 841
                                                                                                                                                                                                 541
                                         421
                                                                                  481
                                                                                                                     481
                                                                                                                                                            541
                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                      109
                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
```

```
GENERAL INFORMATION:
APPLICANT: Millennium Pharmaceuticals, Inc.
APPLICANT: Millennium Pharmaceuticals, Inc.
APPLICANT: Hunter, John Joseph
APPLICANT: Hunter, John Joseph
APPLICANT: Hunter, John Joseph
APPLICANT: Hai, Fong-Ying
APPLICANT: Head, Fong-Ying
APPLICANT: Lesoon, Andrea
APPLICANT: Lesoon, Andrea
APPLICANT: Lesoon, Andrea
APPLICANT: Lesoon, Andrea
APPLICANT: Ridolph-Owen, Laura A,
TITLE OF INVENTION: GRANCER USING 140, 1470, 1686, 2689, 2427, 3702, 5891, 6428,
TITLE OF INVENTION: CANCER USING 140, 1470, 1686, 2689, 2689, 2089, 2089, 2089, 2089, 2089, 2089, 2080, 171TLE OF INVENTION: 3703, 14117, 10359, 1660, 1450, 1884, 9525, 14124, 4469,
TITLE OF INVENTION: B334, 68862, 9011, 14031, 6178, 21225, 14120, 32236, 2099,
TITLE OF INVENTION: 1534, 68862, 9011, 14031, 6178, 21225, 14120, 32236, 2099,
TITLE OF INVENTION: 2150, 25583, 25784, 8941, 9811, 27444, 50566 OR 66428 MOLECULES
FILE REFRENCE: MPIO2-020PIRNOWNIM
CURRENT TAILING DATE: 2003-01-30
PRIOR APPLICATION NUMBER: US 60/353,600
PRIOR APPLICATION NUMBER: US 60/354,557
PRIOR FILING DATE: 2002-03-15
PRIOR FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: US 60/371,075
PRIOR FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: US 60/371,507
                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                            QILATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781 PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                 421 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SVVKDSQVGTVNYMPPBAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 IINQISKLHAIIDPNHEIEFFPDIPEKDLQDVLKCCLKRDFKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                              PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQOH
                                                                                                                                                                                                                                                                                                                                                                                            QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LEEADNOTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KSIDPWERKSYWKONNLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                                                                        PEVPESNOKOWOAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
```

```
780
                                                                                                                                         840
                                                                                                                                                                    VPLSDALLNKLIGRYSQAIBALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Afar, Daniel
APPLICANT: Afar, Daniel
APPLICANT: Gisberg, Wendy M.
APPLICANT: Gisberg, Wendy M.
APPLICANT: Gisberg, Wendy M.
APPLICANT: Gisberg, Wendy M.
APPLICANT: Gisberg, Wendy M.
APPLICANT: Gisberg, Peter A.
APPLICANT: Marke, David H.
APPLICANT: Marken, Suchard
APPLICANT: Marken, Suchard
APPLICANT: Marken, Sucherlogy, Inc.
APPLICANT: Marken, Sucherlogy, Inc.
APPLICANT: Marken, Sucherlogy, Inc.
APPLICANT: MoreNION: Methods of Exceening for Modulators of Cancer
TILLE OF INVENTION: Methods of Exceening for Modulators of Cancer
TILLE OF INVENTION: Methods of Sceening for Modulators of Cancer
TILLE OF INVENTION: Methods of Sceening for Modulators of Cancer
TILLE OF INVENTION: Methods of Sceening for Modulators of Cancer
TILLE OF INVENTION NUMBER: US 60/350,666
PRIOR PLING DATE: 2001-11-13
PRIOR PLING DATE: 2001-11-15
PRIOR PLING DATE: 2001-11-12
PRIOR PLING DATE: 2001-11-12
PRIOR PLING DATE: 2001-11-12
PRIOR PLING DATE: 2001-11-12
PRIOR APPLICATION NUMBER: US 60/334,393
PRIOR APPLICATION NUMBER: US 60/347,319
PRIOR PLING DATE: 2002-01-00
PRIOR FILING DATE: 2002-01-00
PRIOR FILING DATE: 2002-01-00
PRIOR FILING DATE: 2002-01-00
PRIOR FILING DATE: 2002-01-00
PRIOR FILING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PLING DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR PLING DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 2002-01-00
PRIOR DATE: 2002-01-00
PRIOR PRIOR DATE: 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                      781 PVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK
                                   721 IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                    137 IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MNKVRDIKNKFKNEDLIDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 4373, DB 15, Length 857;
Pred. No. 4e-299;
1; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 482, Application US/10295027
Publication No. US20030232350A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 482
LENGTH: 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 99.9
Matches 840; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Homo sapiens
US-10-295-027-482
                                                                                                                                                                                                                                         841 K 841
                                                                                                                                                                                                                                                                                             K 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                          857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                염
                                                                               g
                                                                                                                                                                                  d
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NSLRQINKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQISRSECRDLVVPGSKP 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQH 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MNKVRDIKNKFKNEDLIDELSLNKISADTIDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NSLRQINKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGNDSCELRNIKSVQNSHFKEPLVSDEKSSELIIIDSITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT
                                                                                                                                                                                                                                                                                                                                               See File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 4376; DB 14;
Pred. No. 2.5e-299;
; Mismatches 0;
PRIOR FILING DATE: 2002-04-10
PRIOR APPLICATION NUMBER: US 60/372,984
PRIOR FILING DATE: 2002-04-16
PRIOR FILING DATE: 2002-04-19
PRIOR FILING DATE: 2002-04-19
PRIOR PILING DATE: 2002-05-34
PRIOR PILING DATE: 2002-05-34
PRIOR PILING DATE: 2002-05-34
PRIOR PILING DATE: 2002-05-34
PRIOR PILING DATE: 2002-05-34
PRIOR PRIOR APPLICATION NUMBER: US 60/389,035
PRIOR APPLICATION NUMBER: US 60/389,395
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
PRIOR PILING DATE: 2002-06-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match

Best Local Similarity 100.0%; P. Matches 841; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Homo sapiens
US-10-354-358-30
                                                                                                                                                                                                                                                                                                                                                                                                                         Q ID NO 30
LENGTH: 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

ö

Ωp ò QQ ò a 상

à

8 6 8

8 6 8

상염

8 QQ ò g & g

g

8 8

23;

```
293 LVV--PGSK-----PSGNDSCELR--NLKSVQNSHFKEPLVSDEKSSELIITDSITLKNK 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344 TESSLLAKLEETKEYQEPE-VPESNQK-----QWQAKRKSECINQNPAASSNHWQIPELA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        398 R-----KVNTEQKHTTFEQPVFSVSKQSPPISTS---KWFDPKSICKTPSSNTLDDYM 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     173 EYTLIDPSKISDIKNSTEADEDIEMKSREVSPASNSVAATTLKPLOLHNIPLOISQEHPK 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    448 SCFRIPVVKNDFPPACQL-----STPYGQP-ACFQQQQ------HQI----- 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    233 PSFHPSQFESSFSPRVQFDHDVERRASELHSRPVTVFQEPQRSASQPYESHALSPKVAPL 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----LATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLN-EKKQIYAIK 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          538 YVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ--YIYMVMECGNIDLNS 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     346 EVNFINADOTTIQGYKNEIALLRKL-SGNDRIIKLYAAEVNDTLGQLNMVMECGETDLAN 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    596 WLKK--KKSIDPWERKSYWKNYLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIAN 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               405 LLMKNMKKPINLNFIRMYWEQMLEAVQVVHDQNIVHSDLKPANFLLVEGNLKLIDFGIAK 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           465 AIGNDTTNIHRDSHIGTINYYAPEALTDMNAHTNSGVKLVKLGRPSDVWSLGCILYQMVY 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      714 GKTPFOQIINQISKLHAIIDPNHEIEFPD-----IPEK------DLQDVLKCC 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71 RLVSHPRTKNFDLQGNGGQNSALKEVNTPAYQSMHHFEHLITPLPS------TNASH 121
                                                                                                                                                                                                                                                                                                                                                                                                                        233 QDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               654 QMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                525 GRAPPAH-LKMIQAIAAIPNEQYHIHFPEVALPANAVQEKEGSLPGVTVGPDLMDVMKRC
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                            Query Match 15.4%; Score 673.5; DB 14; Length 678; Best Local Similarity 30.9%; Pred. No. 1.1e-38; Matches 195; Conservative 102; Mismatches 210; Indels 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             756 LKRDPKQRISIPELLAHPYVQIQTHPVNQMAK 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 201272. Application US/10437963
Publication No. US20040123343A1
GENERAL INFORMATION:
APPLICANT: La Rosa, Thomas J.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
APPLICANT: Cao, Yongwei
APPLICANT: Wei Wei
APPLICANT: Wow Wei
            CURRENT APPLICATION NUMBER: US/10/081,119
CURRENT FILING DATE: 2002-02-21
PRIOR APPLICATION NUMBER: 60/289,813
PRIOR FILING DATE: 2001-02-21
NUMBER OF SEQ ID NOS: 38
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                            ; ORGANISM: Schizosaccharomyces pombe
US-10-081-119-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
US-10-437-963-201272
                                                                                                                                                      SEQ ID NO 32
LENGIH: 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  483
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 DQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPK 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 IVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKR 758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKR 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DPKQRISIPELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYE 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DPKQRISIPBELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDXEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 32, Application US/10081119
Publication No. US20030045491A1
GENERAL INFORMATION
GENERAL TRIBUTARY
GENERAL TRIBUTARY, Christoph
APPLICANT: Befferson, Anne B.
APPLICANT: Chan, Vivien W.
TITLE OF INVENTION: Trr in Diagnosis and as a Therapeutic
TITLE OF INVENTION: Target in Cancer
                                                                                                                                                                                         JAPELICANT: BERMER, RYAN
APPLICANT: BERMER, RYAN
APPLICANT: BERAHIM, PRABHA
APPLICANT: KUMAR, ABHINAV
APPLICANT: KUMAR, ABHINAV
APPLICANT: MANDIYAN, VALSAN
APPLICANT: MIBURN, MICHAEL V.
ITLE CO INVENTION: CRYSTAL STRUCTURE OF PIM-1 KINASE
FILE REFERENCE: 039363/0010664,421
CURRENT FILING DATE: 2003-09-16
FRIOR PELICATION NUMBER: 60/412,341
PRIOR APPLICATION NUMBER: 60/411,398
FRIOR FILING DATE: 2002-09-06
FRIOR FILING DATE: 2002-09-06
FRIOR APPLICATION NUMBER: 60/411,398
FRIOR FILING DATE: 2002-09-16
NUMBER OF SEQ ID NOS: 169
SOFTWARE: PATENTIN VET: 3.2
SEQ ID NO 157
LENGTH: 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44.1%; Score 1929; DB 16;
100.0%; Pred. No. 1.7e-127;
tive 0; Mismatches 0;
                                                                                                                                Sequence 157, Application US/10664421 Publication No. US20040142864A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 100.
Matches 367; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Homo sapiens
US-10-664-421-157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYSGGES 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYSGGES 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-119-32
--×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

ద ò g ò

ठ

à

 $\stackrel{>}{\circ}$

19;

```
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 273093
LENGTH: 730
TYPE: PRT
                                                                                                                                                                    at
                                                                                                ORGANISM: Glycine max
PEATURE:
NAME/KEY: unsure
LOCATION: (1)..(730)
OTHER INFORMATION: unsure at
                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-10-425-114-43102
                                                                                                                                                                                                                                                 Query Match
Best Local Simil
Matches 192; C
                                                                                                                                                                                                                                                                                                                   215
                                                                                                                                                                                                                                                                                                                                                98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         629
                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ,
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                 APPLICANT: Li, Ping
TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPERENCE: 38-21(53221)B
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 201272
LENGTH: 742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-424-599-273093
Sequence 273093, Application US/10424599
Publication No. US20040031072A1
SEQUENCE 273093, Application US/2040031072A1
SEQUENCE 273093, Application No. US20040031072A1
APPLICANT: La Rosa Thomas J
APPLICANT: Abou Yinua
APPLICANT: Cao Yongwei
TITILE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53223)B
                                                                                                                                                                                                                                                                                                                                   --KNKTESSLLA-K 351
                                                                                                                                                                                                                                                                                                                                                                                                 -SECINONPAA----SSNHWQI 393
                                                                                                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                                                                                               394 PELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTP 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285 TIQSKSAAQIDÖYASPAQMPQCGRESSGVSGHGSÓKLHGVAMNHADCNTNKQQVDTNGGM 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345 DKPVSSSAVCLPSQGLSGNDQSLSAKDDGAPRRSKVBKGCRKKNYDPDVFFKVNGKLYQK 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             512 LKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIR 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         405 LGKIGSGGSSEVHKVISAECTIYALKKIKLKGRDYPİAYGFCQEIEYLNKLKGKSN-IIQ 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                665 DSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQ 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           605 PWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVK 664
                                                                                                                                                                                                                                                                                                                                                                118 LENAAPDÓN----KAVVSSQ--DELLLÍTPLÍLGTITDTHDQNGGQNHQPKSDTDLLVDR
                                                                                                                                                                                                                                                                                                                                                                                                                       -----LATPLQNL----QVLA----SSSANEC-----ISVKGRIYSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LYDYEITDQ----NSWLKKKKS---ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           725 ISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
14.6%; Score 637.5; DB 16; Length 742;
Best Local Similarity 30.6%; Pred. No. 4.2e-36;
Matches 181; Conservative 92; Mismatches 179; Indels 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             454 VVXNDFPPAC-QLSTPYGQPACFQ-------QQQHQI----
                                                                                                                                                                                                                 ) OTHER INFORMATION: Clone ID: PAT_MRT4530_96664C.1.pep
US-10-437-963-201272
                                                                                                                                                                                                                                                                                                                                 308 LRNLKSVQNSHFKEPLVSDEKSSELIITDSITL-
                                                                                                                                                                                                                                                                                                                                                                                                 352 LEETKEYQEPEVPESNOKOWQAKRK-----
 Barbazuk, Brad
                                                                                                                                                                  TYPE: PRT
ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          584
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
```

```
SVGAHNKVQFLTEINNATAQPQDEASIGFNQHEKHQNMQQAESETSLVSEGGKTSMLPKR 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        320 KEPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSEC 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       392 AYGFCQEIEYLNRL-KGKNMIIQLIDYEVTDKALFEGVINGSFSNKDGRVKDDGYIYMVL 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380 INONPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPS 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        549 LDSYRNEIAYLNKLQOHSDKIIRLYDYEITDQ------YIYMVM 586
                                                                                                                                                                                                                                                                                                              SRGQTTKARFLYGEN----MPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNS--PDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              250 --NSP-----IDAEVTVKQSDPSYEQQGCMLKDTSISKCTS----CR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             539 IVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 DVKTDDSV--VPCFMKRQTSRSECRDLVVPGSKPSGNDSCELRNLKSVQN----SHF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146 TIVTQDHLQQFKNFLRQPATQSSVVGLPCPTTTSVHSTSAPMLNSITHSNSCIDSGSHVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  440 SNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   286 ----DDMLSKGEVSAAVTNLQPQVPTSS-----SEVKLESSKLEKQEKXPSSKAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        500 ECI-----SVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ECGNIDINSWLKKK-----KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S11 LVKGSLKLIDFGIAKAIMSDTTNIQRDSQVGTLSYMSPBAF--MCNESDASGNIIKCGRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            699 SDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206 AEPYGNLDGNSRPIIQGDVKSPN-----ISLKDTNRMSIDQVASAVQ-----DC
                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                   14.3%; Score 627; DB 12; Length 730;
29.4%; Pred. No. 2.3e-35;
Live 98; Mismatches 243; Indels 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | : | | | | | | : : | DENERWRIPQLLQHPFLV---PPVPCHSSFYQEQTFKLLQLISEACINDPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   759 DPKQRISIPELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVG---LNSPNS
                                                                 , OTHER INFORMATION: Clone ID: PAT_MRT3847_88625C.1.pep
US-10-424-599-273093
all Xaa locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 43102, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Liu, Jingdong
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven B
```

Tabaska, Jack E

```
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5.3313) B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 43102
LENGTH: 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195 AIMSDTINIQRDSQVGTLSYMSPEAF--MCNESDASGNIIKCGRPSDIWSLGCILYQMVY 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253 GRIPPADYKIFWAKFKVITDPNHEIMYAPVSNPWLLDLMRRCLAWDRNERWRIPQLLQHP 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              504 VKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQ 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----YIYMVMECGNIDLNSWLKKK- 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601 -----KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIAN 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     714 GKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHP 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16 VNGKLYQRLGKIGSGGSSEVHKVISSDCTIYALKRIKLKGRDYATAYGFCQEIEYLNRL- 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      654 QMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKKKISPKSDVWSLGCILYYMTY
                                                                                                                                                                                                                                                                                                                                                                         Query Match
14.0%; Score 614; DB 12; Length 399;
Best Local Similarity 41.1%; Pred. No. 8.1e-35;
Matches 139; Conservative 53; Mismatches 106; Indels 40; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        774 YVQIQTHPVNQMAKGTTEEMKYVLGQLVG---LNSPNS 808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FLV----PPVPCHSSFYQEQTFKLLQLISEACINDPES 346
                                                                                                                                                                                                                                                                                                    , OTHER INFORMATION: Clone ID: 700729819_FLI.pep US-10-425-114-43102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Search completed: September 29, 2004, 16:30:17
Job time : 148 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   564 QHSDKIIRLYDYEITDQ------
                                                                                                                                                                                                                               TYPE: PRT ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
```

This Page Blank (uspto)

```
P33981 homo sapien P33981 homo sapien P35761 mus musculu 094235 schizosacch C860e8 homo sapien C860v0 mus musculu 093170 schizosacch O74536 schizosacch O74536 schizosacch O99648 mus musculu 001329 schizosacch O8648 mus musculu 0014299 schizosacch O8648 mus musculu 0014299 saccharomyc P66784 saccharomyc P66784 saccharomyc P66784 saccharomyc P66784 saccharomyc P66866 mus musculu 01236 saccharomyc P66860 mus musculu D5746 homo sapien Q68650 arabidogais P52497 candida alb P46551 caenorhabdi P36582 schizosacch O86643 mus musculu P11799 gallus gall Q92011 rattus norv 099660 homo sapien 075914 homo sapien 013188 homo sapien
                                                                                                         September 29, 2004, 16:03:10 , Search time 27 Seconds (without alignments) 1621.889 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                 US-10-081-119-14
4376
1 WMKVRDIKNKFKNEDLTDEL......GGESHNSSSSKTFEKKRGKK 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                     141681 seqs, 52070155 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAKI MOUSE
KMLS CHICK
CNK RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTK HUMAN
TTK MOUSE
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MPBI SCHPO
MP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                       OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                               , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SwissProt_42:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match 1
                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Result
No.
```

34 280.5 6.4 544 1 PAK3_RAT Q62829 rattus norv 35 290 6.4 891 1 KINI_SCHPO P35465 rattus norv 37 279 6.4 547 1 PAK1_RAT P07934 mus musculu 38 278 6.4 387 1 KPBG_MOUSE P07934 mus musculu 39 277 6.3 893 1 KMSS_YEAST Q01533 saccharomyc 40 277.5 6.3 893 1 KNRS_YEAST Q01533 saccharomyc 41 277 6.3 313 1 NEK6_MOUSE Q91629 home sapien 42 277 6.3 314 1 NEK6_MOUSE Q91629 concession 44 276.5 6.3 384 1 ARK1_SCHPO Q9163 such succulu 45 276.5 6.3 511 1 NEK3_MOUSE Q9163 mus musculu 45 276.5 6.3 511 1 NEK3_MOUSE Q91635 mus musculu 45 276.5 6.3 511 1 NEK3_MOUSE	TITE TARNDARD, PRT, 841 THTR HUMAN STANDARD, PRT, 841 01-FEB-1994 (Rel. 28, Created) 01-FEB-1994 (Rel. 28, Created) 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 16-OCT-2001 (Rel. 40, Last annotation upda 17
	######################################

これ この ゲム /

```
INSIDE PRISTUE SEQUENCE=VSP_004875;
-!- TISSUE SPECIFICITY: PRESENT IN RAPPIDLY PROLIFFRATING CELL LINES;
HIGH LEVELS IN TESTIS, BONE MARROW, SPLEEN AND THYMUS. LOW LEVELS
IN BRAIN, HERRT, LUNG AND KIDNEY.
-!- FTW: Autophosphorylated.
-!- FTW: Autophosphorylated.
-!- SIMILARITY: Belongs to the Ser/Thr family of protein kinases.
This SWISS-RROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation between the Swiss Institute of Bioinformatics and the RBL outstation way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
PUNQWAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tyrosine-protein kinase, Alternative splicing, Phosphorylation.
DOMAIN 524 790 PROTEIN KINASE.
NP BIND 530 ATP (BY SIMILARITY).
BINDING 552 552 ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR; A44439; A44439.

R PIR; B44439; B44439.

R MSSP; Q0634; BIRS.

R InterPro; IPR000719; Prot kinase.

R InterPro; IPR00821; Ser_Uhr_Dkin_AS.

InterPro; IPR008941; TPR-like.

R InterPro; IPR008941; TPR-like.

R FEm; PF00069; pkinase; 1.

R Prodom; PD000001; Prot kinase; 1.

R SWART; SM00220; STKC; 1.

R PROSITE; PS00107; PROTEIN KINASE ATP; FALSE_NEG.

R PROSITE; PS00108; PROTEIN KINASE_ST; 1.

R PROSITE; PS00108; PROTEIN KINASE_SOM; 1.

R PROSITE; PS00108; PROTEIN KINASE_SOM; 1.

R TRAISferase; Serine/threomine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                           01-JUN-1994 (Rel. 29, Created)
1-JUN-1994 (Rel. 29, Last sequence update)
28-FBB-2003 (Rel. 41, Last amoutation update)
Dual specificity protein kinase TTK (BC 2.7.1.-) (ESK) (PYT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IsoId=P35761-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M86377; AAA37578.1; -.
                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090;
                                                                    K 841
                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                         TTK OR ESK.
                                                                                                             -14
                                                                                                                                                                                                                               TTK MOUSE
P35761:
                          781
                                                                      841
                                                                                                                                                                                      RESULT 2
TTK_MOUSE
                                                                                                             g
                                                                    ò
                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEFETKEYQE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEVPESNOKOWOAKRKSECINONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOS 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKK 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTT 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQTH 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781 PVNOMAKGTTEEMKYVLGOLVGLNSPNSILKAAKTLYEHYSGGESHNSSSSKTFEKKRGK 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VPLSDALLNKIJGRYSQAIBALPPDKYGQNESFARIQVRFABLKAIQEPDDARDYFQWAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QILATPLONLOVLASSSANECISVKGRIYSIIKQIGSGGSSKVFOVLNEKKOIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541 LEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVWECGNIDLNSWLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 NSLROTNKTKOSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKROTSRSECRDLVVPGSKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSIITLKNKTESSLLAKLEETKEYQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEVPESNOKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 PPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                          MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 4376; DB 1; Length 841; 100.0%; Pred. No. 1.4e-213; ive 0; Mismatches 0; Indels 0
                 PEGNOGO, PATRONO.

PERMI, PROMOSO, PATRONO.

SMART, SMO0220; STRC, 1.

PROSITE; PSO0103; PROTEIN KINASE ATP; 1.

PROSITE; PSO0104; PROTEIN KINASE ST; 1.

PROSITE; PSO0106; PROTEIN KINASE ST; 1.

PROSITE; PSO0106; PROTEIN KINASE ST; 1.

PROSING-Protein kinase.

Tyrosine-protein kinase.

Tyrosine-protein kinase.

PROTEIN KINASE.
                                                                                                                                                                                                    PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY CHILLARITY).

BY SIMILARITY.

L -> V (IN REF. 2).

L -> V (IN REF. 2).

W, ACDECZACDISEF08C CRC64;
                                                                                                                                                                                                                                                                                                                           MM.
                                                                                                                                                                                                                                                                                                                           95279
                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 100.
Matches 841; Conservative
                                                                                                                                                                                                            775
523
537
631
752
                                                                                                                                                                                                       509 7
515 53
537 5
631 6
752 7
                                                                                                                                                                                                                                                                        ACT SITE
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
  NAC RACE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qα
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \overset{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ПЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
```

```
470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     830
                                                                                                                                                                  120
                                                                                                                                                                                         132
                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                252
                                                                                                                                                                                                                                                                                                                         283
                                                                                                                                                                                                                                                                                                                                                                                         DSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQIPE 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              650
                                                                                                                                        72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LKRDPKQRISIPELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EITEQYIYMVMECGNIDLNSWLKKKKKSINPWERKSYWKNMLEAVHIIHQHGIVHSDLKPA
                                                                                                                               SPLNDDILINKLIGRYSQAIEVLPPDKYGQNESFARIQVRLAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                   121 ANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVFLEMLEIALRNLNLQKKQLLS
                                                                                                                                                                                                                                   ENCKKFAFVHVSFAQFELSQGNLKKSEQLLHKAVETGAVFLQMLETAMRNLHLQKKQLLP
                                                                                                                                                                                                                                                                      EEEKKNLSASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTKARFLYGENMPPQDAEIGYR
                                                                                                                                                                                                                                                                                     --VPCFMKR
                                                                                                                                                                                                                                                                                                                                                 253 NPFKOTHAAKRSCPFGRVPVNLLNSPDFYVKTDSSAVTQLTTRLALSSVPLPYVTCLLHL
                                                                                                                                                                                                                                                                                                                                                                          Q-----TSRSECRDLVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIIT
                                                                                                                                                                                                                                                                                                                                                                                                                                            DLIALKSKTDSS-LTKLEETK----PEIAERRPMOMOSTRKPECVFONPAAFAPLRHVPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KNDFPPACPSSTPYSOLARLOOOOOGLSTPLOSLOISGSSSINECISVNGRIYSILKOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSGGSSKVFQVLNEKKQINAIKYVNLEDADSQTIESYRNEIAFLNKLQQHSDKIIRLYDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BITDQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKI
                                                                                                                 1 MNKVRDIKNKFKNEDLTDELSLNKISADTTDNSGTVNQIMMMANNPEDWLSLLLKLEKNS
                                                                                                                                                                  VPLSDALLNKLIGRYSQAIEALPPDKYGQNESFARIQVRFAELKAIQEPDDARDYFQMAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KNDFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSGGSSKVFQVLNEKKQIYAIKYVNLEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDY
                                                             1; Length
                                                                                       Indels
BY SIMILARITY.
Missing (in isoform 2).
/FIId=VSP 004875.
31F8C16C195E6E86 CRC64;
                                                                                                                                                                                                                                                                                                                          NSLRQTNKTKOSCPFGRVPVNLLNSPDCDVKTDDSV-----
                                                            / Match 72.3%; Score 3165.5; DB 1; Local Similarity 71.8%; Pred. No. 1.5e-152; les 622; Conservative 86; Mismatches 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LYEHYSGGESHNSSSSKTFEKKRGKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              856 AA; 96210 MW;
                                                                                                                                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      771
                                                                                                                                        17
                                                                                                                                                                                           73
                                                                                                                                                                                                                                               133
                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                              336
                                                                                                                                                                                                                                                                                                                                                                                                                                                      372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         831
                                    SEQUENCE
                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                             284
                                                              Query Match
                                                                             Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                        임
                                                                                                                                                                                         g
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                      \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                           ò
```

678 AA

PRT;

STANDARD;

RESULT 3 MPH1_SCHPO ID _MPH1_SCHPO

```
AC 094313; OSPETA, OGUNGA, OF Created)

TIS-COTTONIO (REL. 40, DER SEGGED SUPPLY OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATED STREET, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OF CREATE, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA, OGUNGA,
```

us-10-081-119-14.rsp

```
DOMAIN
DOMAIN
NP BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                   A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A PARTER A P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           233 QDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSRSECRD 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               293 LVV--PGSK-----PSGNDSCELR--NLKSVQNSHFKEPLVSDEKSSELIITDSITLKNK 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71 RLVSHPRTKNFDLQGNGGQNSALKEVNTPAYQSMHHFEHLITPLPS------TNASH 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             344 TESSLLAKLEETKEYQEPE-VPESNQK-----QWQAKRKSECINQNPAASSNHWQIPELA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             398 R-----KVNTEOKHTTFEQPVFSVSKOSPPISTS---KWFDPKSICKTPSSNTLDDYM 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     173 EYTLIDDSKISDIKKISTEADEDIEMKSREVSPASNSVAATTLKPLOLHNIPLOISOEHPK 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               448 SCFRIPVVXNDFPPACQL------482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             293 FDNSQATPIPKRQ-----QDVVTVANLQFIKLGVVGKGGSSMVYRIFSPDNSRLYALK 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346 EVNFINADQTTIQGYKNEIALLRKL-SGNDRIIKLYAAEVNDTLGQLNMYMECGETDLAN 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WLKK--KKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIAN 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GKTPFQQIINQISKLHAIIDPNHEIEFPD-----IPEK------DLQDVLKCC 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R InterPro; IPR002290; Ser ...
JR Pfam, PF00669; pkinase; I.
DR ProDom; PD000001; Prot kinase; I.
DR SWART; SM00220; S.TKc; I.
DR PROSITE; PS00101; PROTEIN KINASE ATP; I.
DR PROSITE; PS00108; PROTEIN KINASE DOW; I.
DR PROSITE; PS00108; PROTEIN KINASE ST; I.
KW Transferase; Serine/threonine-protein kinase; ATP-binding; Mitosis.

NOMAIN 157 160 POLY-ARG.

PROTEIN KINASE.

330 ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

"V SIMILARITY."

"V SIMILARITY."

"V SIMILARITY."

"Theologes CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32 ODPELYFKN---DIFSSKSS------HSDGTVTGDTLRROSGATALE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     538 YVNLEBADNOTLDSYRNEIAYLNKLOQHSDKIIRLYDYBITDQ--YIYMVMECGNIDLNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----LATPLONLOVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLN-EKKQIYAIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QMQPDTTSVVKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-1996 (Rel. 34, Created)
1-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last amotation update)
Serine/threonine protein kinase MPS1 (EC 2.7.1.-) (Regulatory cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tch al Similarity 30.9%; Pred. No. 4.7e-27; 195; Conservative 102; Mismatches 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LKRDPKQRISIPELLAHPYVQIQTHPVNQMAK 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |:|| ::|::||||| ||::
LERDQRKRLTIPELLVHPFLNPLPSYLTPLAK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               764 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   proliferation kinase 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MPS1 YEAST
P54199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MPS1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                DR ROBERT LEAR SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Пр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saren A.M., Laamanen P., Lejarcegui J.B., Paulin L.;
"The sequence of a 36.7 kb segment on the left arm of chromosome IV
from Saccharomyces cerevisiae reveals 20 non-overlapping open reading
frames (ORFS) including SIT4, FAD1, NAM1, RNA11, SIR2, NAT1, PRP9,
ACT2 and MPS1 and 11 new ORFS.";
Yeast 13:65-71(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "RPK1, an essential yeast protein kinase involved in the regulation of the onset of mitosis, shows homology to mammalian dual-specificity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRINTENSISES, EXCRETOR TO LUCA F.C., Weiss B., Schutz A.R., Winey M., "Yeast spindle pole body duplication gene MPS1 encodes an essential dual specificity protein kinsse.";

BERD J. 14.4655-1663(1995)

- I- FINCTION: Involved in the regulation of the onset of mitosis.

Involved in a pathway that coordinates cell proliferation and differentiation. Implicated in spindle pole body (SPD) duplication. Dual specificity kinase that can phosphorylate serine, threonine and tyrosine residues.

- PTM: Autophosphory ated.
- SIMILARITY: Belongs to the Ser/Thr family of protein kinases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SGD; 80002186; MPSI.

SGD; 80002186; MPSI.

GO; GO:0000778; C:condensed nuclear chromosome kinetochore; IDA.

GO; GO:0008186; C:spindle pole body; IDA.

GO; GO:0004712; F:protein threonine/tyrosine kinase activity; IDA.

InterPro; IPR003719; Prot kinase.

InterPro; IPR00371; Ser Ehr pkin AS.

InterPro; IPR003730; Ser thr pkin AS.

InterPro; IPR002290; Ser thr pkinase.
                                          Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-ATCC 28383 / FL100;
MEDLINE=94301294; PubMed=8028580;
Poch O., Schwob E., de Fraipont F., Camasses A., Bordonne R.,
Martin R.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROBLES PRODUCT PROBLEM PROBLEM PROBLEM PROBLEM PROBLEM PROBLEM PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROCESSIVE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PROFILE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POLY-SER.
PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHARACTERIZATION, AND MUTAGENESIS OF ASP-580.
MEDLINE=95255223; PubMed=7737118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLY-SER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mol. Gen. Genet. 243:641-653(1994).
OR RPK1 OR YDL028C OR D2785.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=97197972; PubMed=9046088;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; L08909; AAA88731.1; -.
EMBL; Z71781; CAA96461.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL, Z74076; CAA98587.1; -. PIR, S67561; S67561. GermOnline; 140270; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   282
315
720
454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                  NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          273
309
444
446
468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kinases.";
```

```
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SERGEIELLEKLKDOK-RVIQLLDYEMGDGLLYLIMECGDHDLSQILNQRSGMPLDFNFV 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      009
                                                                                                                                                                                                                                      219
                                                                                                                                                                                                                                                                                                                                 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKS--IDPWER 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                                                                                                                                                                                                                                                                                                                        295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IEIRRALKENIDTSNNSNFNSPIHKIYK---GISRNKDSDSEKREVLRNISINANHADNL 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LQQENKRLKRSLDD------AITNENINSKNLEVFYHRPAPKPPVTKKVEIVEPAKSA 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISKLHAIIDPNHEIEFPD-----IPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQ 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SL---SNNRNIITVNDSQYEKIELLGRGGSSRVYKVKGSGNRVYALKRVSFDAFDDSSID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Tousled-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QVLASSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQIYAIKYVNLEEADNQTLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTVNYMPPEAIKDM----SSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KSYWKWAMLEAVHTIHQHGIVHSDLKPANFLIVDGMLKLIDFGIANQMQPDTTSVVKDSQV
                                                                                                                                                                                                                                                                   LFGRYLRNNHOTSMTTMNTSDIBINVGNSLDKSFERIRNLRQNMKEDITAKYAERRSKRF
                                                                                                                                                                                                                                                                                                                                                                                                                        --TNKTKQSCPFGRVPV-----NLLNSPDCDVKTDDSV-VPCFMKRQTSRSECRDLVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LISNRTTKLGPAKRAMTLTNIFDEDVPNSPNQPINARETVELPLEDSHQTNFKERRE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----EKSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----NTDYDSIDFGDLNPIQ--YIKKHNLPTSDLPLISQIYFDKQREENRQAALRKHSSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WQIPELARKVNTEQKHTTPEQPVFSVSKQSPPISTSKWFD--PKSICKTPSSN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----TLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQI-LATPLQNL
                                                                                                                                                                                                                                      --GSLGHLQNRNNSCDSRGQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                         161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (EC 2.7.1.37)
                                                                                                                                          Score 586.5; DB 1; Length 764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGSKPSGNDSCELRNLKSVQNSHFKE-----PLVSD-----
                                                                                                                                                                                         Indels
BY SIMILARITY.
D->A: LOSS OF ACTIVITY.
A -> S (IN REF. 1).
RRE -> TRR (IN REF. 1).
', 26B171DFF8B8BB4D CRC64;
                                                                                                                                                                Pred. No. 1.3e-22; ; Mismatches 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OBOUT OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               772 AA
                                                                                                                                                                                                                                        LLSEEEKKNLSASTVLTAQESFS-----
                                                                                                                                                                                                                                                                                                                                 TKARFLYGEN-----MPPODAEIGYRNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                         Conservative 140;
                                                                                                86827 MW;
                                                                                                                                          13.4%;
26.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ike kinase 2) (PKU-alpha)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
    563
580
146
213
                                                                                                764 AA;
                                                                                                                                                                     Similarity
  563
580
146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMAN
                                                                                                                                                                   Best Local Sim
Matches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              725
                                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                 220
                                                                                                                                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
  ACT_SITE
MUTAGEN
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                  40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 425
                                                                                                                                                                                                                                                                                                                                                                                                                             246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296
                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LK2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
TLK2_HU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OCCURRENTARY
       FFF
FFF
SO
SO
                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                             ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \delta
```

```
As Straubberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,
Straubberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,
Rha Strausberg R.L., Feingold B.A., Grouse L., Shenmen C.M., Schuler G.D.,
Rha Alacchul S.P., Zebeberg B. Buercow K.H., Schemer C.F., Bhara N.K.,
Alacchul S.P., Zebeberg B. Buercow K.H., Schaefer C.F., Bhara N.K.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Rha Brownstein M.J. Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Rha Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Rha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Rha S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Rhialon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Rhiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,
Rhiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,
Rhiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,
Rhakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
R Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA damage checkpoint.";
EMBO J. 22:1676-1687(2003).
-!- FUNCTION: Rapidly and transiently inhibited by phosphorylation
-!- Fullowing the generation of DNA double-stranded breaks during S-
phase. This is cell cycle checkpoint and ATM-pathway dependent and
appears to regulate processes involved in chromatin
                                                      TISSUE=Placenta, and Testis;
MEDLINE=98087437; PubMed=9427565;
Yamakawa A., Kameoka Y., Hashimoto K., Yoshitake Y., Nishikawa K.,
Tanihara K., Date T.,
"cDNA cloning and chromosomal mapping of genes encoding novel protein kinases termed PKU-alpha and PKU-beta, which have nuclear localization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hansen K.; "Human Tousled like kinases are targeted by an ATM- and {\tt Chkl-dependent}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-22546651; PubMed=12660173;
Groth A., Lukas J., Nigg E.A., Sillje H.H.W., Wernstedt C., Bartek J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      s-
py
                                                                                                                                                                                                                                                                                                                    Sillje H.H.W., Takahashi K., Tanaka K., Van Houwe G., Nigg B.A.; "Mammalian homologues of the plant tousled gene code for cell-cycleregulated kinases with maximal activities linked to ongoing DNA
                 AND
                                                                                                                                                                                                                                       SEQUENCE FROM N.A. (ISOFORM 2), FUNCTION, MUTAGENESIS OF ASP-592, SUBCELLULAR LOCATION, INTERACTION WITH TLKI, AND ENZYME REGULATION TISSUE=Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            maximal activity in 8 Ser-749, potentially
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assemily:
CATALYTIC ACTIVITY: ATP + a protein = ADP + a phosphoprotein.
COFACTOR: Magnesium.
               SUBCELLULAR LOCATION,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Name=1;
IsoId=Q8GUE8-1; Sequence=Displayed;
NotCe=No experimental confirmation available;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Event=Alternative splicing; Named isoforms=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENZYME REGULATION: Cell-cycle regulated, phase. Inactivated by phosphorylation at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IsoId=Q86UE8-2; Sequence=VSP_050573;
                 (ISOFORM 3), FUNCTION,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBUNIT: Heterodimerizes with TLK1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Testis;
MEDLINE=22388257; PubMed=12477932;
                                                                                                                                                                                                                                                                                                         MEDLINE=99452775; PubMed=10523312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: Nuclear.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION, AND ENZYME REGULATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. (ISOFORM 1).
                                                                                                                                                                                                                                                                                                                                                                                                            EMBO J. 18:5691-5702(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mouse cDNA sequences.
                                                                                                                                                                                                    Gene 202:193-201(1997)
                 SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                            ication.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Мате=2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Name=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GHKI
                                                                                                                                                                                     signal
```

```
490
          | | :: | :: | :: | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | | :: | :: | | :: | :: | | :: | :: | | :: | :: | | :: | :: | | :: | :: | | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :: | :
                                                                                                                                                                                                                                                                                                         354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --LKDTAPALGAHSLIRLTLAEYHEQEEIFKURLGHLKKEEAEIQAELERL 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385 AASSNHWQIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLD 444
                                                                                                                                                                                                                                                                                                                                                                                                                                      KYVNLEEA-DNQTLDSYRNEIAYLNKLQQHSD--KIIRLYDYEI--TDQYIYMVMECGNI 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               760
                                                                                                    278 PCFMKRQISRSEC----RDLVVPGSK------PSGNDSCELRNLKSVQN-SHFKEPLV
                                                                                                                                                    | : | : | : | | : | | 254 KMLEKYKERLNRCVTMSKKLLIEKSKQEKMACRDKSMQDRLRLGHFTTVRHGASFTEQW-
                                                                                                                                                                                                                                                                                                      ------TDGYAFQN-----LIKQQERINSQREEI--ERQRKMLAKRKPPAMGQAP
                                                                                                                                                                                                                                       SDEKSSELIIDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491 QVLASSSANECISVKGR------IYSILKQIGSGGSSKVFQVLNEKKQIY-AI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shalom S., Don J., "Thk, a novel evolutionarily conserved murine serine threonine kinase, encodes multiple testis transcripts."; Mol. Reprod. Dev. 52:392-405(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DYMSCFRTPVVKNDFPPA------CQLSTPYGQPACFQ-----QQQHQILATPLQNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LIDFGIANQMQPDTTSVVKDSQV----GTVNYMPPEAIKDMSSSRENGKSKSKISPKSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611 ITDFGLSKIMDDDSYNSVDGMELTSQGAGTYWYLPPECF-----VVGKEPPKISNKVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VWSLGCILYYMTYGKTPF-----QQIINQISKLHAIIDPNHEIEFPDIP--EKDLQDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           664 WASVGVIFYQCLYGRKPFGHNQSQQDILQENTILKAT-----EVQFPPKFVVTPEAKAFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             753 KCCLKRDPKORISIPELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVGLNSPNSILKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Tousled-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DINSWLKKKKSIDPWERKSYWKNMLEAVHTIHQ--HGIVHSDLKPANFLIVDGM----LK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.7.1.37)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. (ISOFORM 1 AND 3), FUNCTION, AND TISSUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               055047; Q9D5Y5; 10-OCT-2003 (Rel. 42, Created) 10-OCT-2003 (Rel. 42, Last sequence update) 10-OCT-2003 (Rel. 42, Last amotation update) Serine/threonine-protein kinase tousled-like 2 (EC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Testis;
MEDLINE-99190540; PubMed=10092119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S-----TSGASNNSSSN 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [2]
SEQUENCE FROM N.A. (ISOFORM 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813 AKTLYEHYSGGESHNSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     like kinase 2).
FLK2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TLK2_MOUSE
ID _TLK2_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                       325
                                                                                                                                                                                                                                                                                                      313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                           g
                                                                                                                                                                                                                                       \dot{\circ}
                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LP-TLMSVMLAKPRLDTEQL---AQRGAGLCFTFVSAQQNSPSSTGS-GNTEHSCSSQKQ 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TIKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTD-DSVV 277
                                                                                                                                                                                                                                                                                                                                                                                                                                            REMEL, AEGO64884; BAA20561.1; ALT INIT.

REMEL, AEGO64884; BAA20561.1; ALT INIT.

REMEL, EC044925; AAH4925.1; ALT_INIT.

REGNEW, HGNC.11842; TLKZ.

REGNEW, HGNC.11842; TLKZ.

REGNEW, HGNC.11842; TLKZ.

REGNEW, HGNC.11842; TLKZ.

REGNEW, GO:0005624; F:ATP binding; IDA.

REGNEW, GO:0005624; F:ATP binding; IDA.

REGNEW, GO:0005624; F:ATP binding; IDA.

REGNEW, REGNEW, F:Protein serine/threonine kinase activity; IDA.

REGNEW, REGNEW, F:ATP binding; IDA.

REGNEW, REGNEW, F:ATP binding; IDA.

REGNEW, REGNEW, F:REGNEW, REGNEW, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DYFEFAGGSAPGTSPGRSVPPVARSSPQHSLSNPLPRRVEQPLYGLDGSAAKEATEEQSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---OKAVERGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       159 VPLEMLEIALRNINLOKKOLLSEEEKKNISASTVITAQESFSGSLGHLQNRNNSCDSRGQ
IsoId=Q86UE8-3; Sequence=VSP_050572, VSP_050573; TISSUE SPECIFICITY: Widely expressed. Present in feral placenta, liver, kidney, pancreas, heart and skeletal muscle. Also found iadult cell lines.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PERMI, PF00069; pkinase; 1.
Probom; P000001; Prot kinase; 1.
Probom; P0000001; Prot kinase; 1.
SWART; SM00220; STKc; 1.
PROSITE; P800107; PROTEIN KINASE ATP; 1.
PROSITE; P800109; PROTEIN KINASE DOW; 1.
PROSITE; P800109; PROTEIN KINASE ST; 1.
Chromatin regulator; ATP-binding; Serine/threonine-protein kinase; Transferase; Cell cycle; DNA damage; Nuclear protein; Coiled coil; Phosphorylation; Alternative splicing.
                                                                                                                            SIMILARITY: Belongs to the Ser/Thr family of protein kinases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Missing (In isoform 2 and isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PHOSPHORYLATION (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.9%; Score 347.5; DB 1; Length 772; 2.3%; Pred. No. 1.5e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KINASE ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DYFOMARANC----KKFAFVHISFAQFELSQGNVKKSKQLL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                765EE37ED4A4ADEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COLLED COLL (POTENTIAL)
COLLED COLL (POTENTIAL)
COLLED COLL (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fissing (in isoform 3). 
FTId=VSP 050572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D->A: LOSS OF KINS

M -> I (IN REF. 1).

H -> R (IN REF. 1).

Q -> P (IN REF. 1).

Q -> R (IN REF. 1).

M -> I (IN REF. 2).

M -> I (IN REF. 1).

E -> R (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            050573.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 22.3%; Pred. No. 1.5e
8; Conservative 131; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /FTId=VSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Missing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87660 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4451
4474
4491
592
750
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161
207
562
727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161
207
562
727
772 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACT SITE
MOD RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MUTAGEN
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
NP BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
```

g $\stackrel{>}{\circ}$ g 8

ਨ੍ਹੇ

```
Isoid=055047-3; Sequence=vSP 050574;
TISSUE SPECIFICITY: UbiquitousTy expressed in all tissues
examined, with high levels in heart and testis, in particular the
pachytene spermatocytes and in round spermatids. Some evidence for
the existence of a testis-specific isoform suggesting a role in
                                                                                                                                                                                                                                                                                                                  me=2;
IsoId=055047-2; Sequence=VSP_050575, VSP_050;
Note=No experimental confirmation available;
                                                                                                                                                                                                                                                                                                      Name=1;
IsoId=O55047-1; Sequence=Displayed;
                                                                                                                                                                       TISSUE SPECIFICITY.
```

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its

SIMILARITY: Belongs to the Ser/Thr family of protein kinases.

spermatogenesis.

RACKARNAL-2/2354683; PubMed=1246681; RACKARNAL-2/246403; PubMed=1246681; RACKARNAL-2/246403; PubMed=1246681; RACKARNAL-2/2464083; PubMed=1246681; RACKARNAL-2/2464083; PubMed=1246681; RACKARNACH, Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Salvo R., Rackarnali R., Hill D.P., Bult C., Hume D.A., Quackenbush J., Radd D., Brusic V., Chochia C., Corbani L.E., Cousins S., Blake J.A., Bradt D., Brusic V., Chochia C., Corbani L.E., Cousins S., Radasterland T., Gariboldi M., Gissi C., Godzik A., Frazer K.S., Radasterland T., Gariboldi M., Gissi C., Godzik A., Frazer K.S., Radasterland T., Gariboldi M., Gissi C., Godzik A., King B.L., Kawasawa Y., Kedzierski R.M., King B.L., Aronagaya A., Kurochkin I.V., Lee Y., Lehhard B.L., Johns, P.A., Radolott D.R., Maltais L., Marchionni L., McKenzie L., Miki H., Ragashima T., Numata K., Okido T., Pavan W.J., Pertea G., Pesole G., Petrovsky N., Pillai R., Pontlus J.U., Oil., Ramachandran S., Sandelin A., Schneider C., Semple C.A., Setou M., Shimada K., Shingan I., Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.Z., Watanab Y., Walls C., Wanner A., Takenaka Y., Taylor M.S., Taradala R.D., Tamatasu N., Sato K., Allaning L.G., Wannewa M., Tanylor M.S., Taradala R.D., Haraka W., Hashizume W., Imotani K., Alakawa T., Pukuda S., Alaniaki T., Waki K., Kawai J., Aizawa K., Arakawa T., Pukuda S., Alaniaki A., Yoshino M., Warerston R., Lander B.S., Rogers J., R. Alaniysis of the mouse transcriptome based on functional annotation of K. Nature 420:563-573(2002). similarity). FUNCTION: Testis-specific isoforms may play a role in Comment-Additional isoforms seem to exist;

use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch). DSVVPCFMKRQTSRSEC----RDLVVPGSK-----PSGNDSCELRNLKSVQN-SHFK 320 |: |: | :: : | | :| :| | :| | EQSALP-TLMSVMLAKPRLDTEQLAPRGAG---LCFTFVSAQQNSPSSTGS-GNTEHSCS SQKQIS----IQHRQTQSDLTIEKISALENSKNSDLEKKEGRID-DLLRA-NCDLRRQI ERGAVPLEMLEIALRNINLOKKOLLSEEKKNLSASTVLTAQESFSGSLGHLONRNNSCD SRGQTTKARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTD-268; Indels 172; 7.7%; Score 315; DB 1; Length 718; 22.1%; Pred. No. 5.8e-10; ive 128; Mismatches 268; Indels 17 520 I -> M (IN REF. 2).
525 K -> T (IN REF. 2).
535 I -> T (IN REF. 2).
540 K -> E (IN REF. 2).
543 N -> D (IN REF. 2).
558 N -> D (IN REF. 2).
558 N -> D (IN REF. 2).
558 N -> D (IN REF. 2).
558 N -> D (IN REF. 2).
558 N -> D (IN REF. 2).
558 N -> D (IN REF. 2). FTIG=VSP Conservative 718 AA; Similarity 5250 5250 5250 5250 5250 5250 5250 161; CONFLICT CONFLICT CONFLICT CONFLICT CONFLICT CONFLICT CONFLICT CONFLICT SEQUENCE 155 110 215 165 274 218 Query Match Local Matches g à 유 $\stackrel{>}{\circ}$ 원

```
| | : | | : | | : | | : | | : | | : | | : | | | : | | : | | | | : | | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       501 CISVKGR-----IYSILKQIGSGGSSKVFQVLNEKKQIY-AIKYVNLEEA-D 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEKKENYHKHACREYRIHKELDHPRIVKLYDYFSLDTDSFCTVLEYCEGNDLDFYLKOHK 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIDPWERKSYWKNMLEAVHTIHQ--HGIVHSDLKPANFLIVDGM----LKLIDFGIANQM 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPDITISTATION OPPORTUNISTATION O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            567 DDDSYNSVDGMELTSQGAGTYWYLPPECF-----VVGKEPPKISNKVDVWSVGVIFYQ 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              762
EPLVSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSECI 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RIDVQQLACDPY--LLPH-----TS 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TLK1_HUMAN STANDARD, PRT; 766 AA.
09UKKB; 014150; 08N591; 09NYH2; 09Y4F6;
10-0CT-2003 (Rel. 42, Last sequence update)
10-0CT-2003 (Rel. 42, Last annotation update)
10-0CT-2003 (Rel. 42, Last annotation update)
Serine/threonine-protein kinase tousled-like 1 (EC 2.7.1.37) (Tousled-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "CUNA CLONING and chromosomal mapping of genes encoding novel protein kinases termed PKU-alpha and PKU-beta, which have nuclear localization signal.",
                                                                                                                                                                                                                                                                           ---GAENETLTLAEYHEQEEIFKLRLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 381 NONPAASSNHWOIPELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSS
                                                                                                                                                                                                                                                                                                                                                                                                             NTLDDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ------LKKEEABIQA-BLERLERVRNLHIRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           546 NQTLDSYRNEIAYLNKLQQHSD--KIIRLYDYEI--TDQYIYMVMECGNIDLNSWLKKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   711 MIYGKTPF-----QQIINQISKLHAIIDPNHEIEFPDIP--EKDLQDVLKCCLKRDPKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RISIPELLAHPYVQIQTHPVNQMAKGTTEEMKYVLGQLVGLNSPNSILKAAKTLYEHYSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Placenta; MEDLINE=99452775; PubMed=10523312; MEDLINE=99452775; PubMed=10523312; Silije H.H.W., Takahashi K., Tanaka K., Van Houwe G., Nigg B.A.; "Mammalian homologues of the plant tousled gene code for cell-cycle-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. (ISOFORM 2), FUNCTION, SUBCELLULAR LOCATION, AND TISSUE SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. (ISOFORM 1), FUNCTION, MUTAGENESIS OF ASP-586, SUBCELLULAR LOCATION, INTERACTION WITH TLK2, AND ENZYME REGULATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Placenta, and Testis,
MEDLINE-98087437; PubMed-9427565,
MEDLINE-98087437; PubMed-9427565,
Tamakawa A., Kameoka Y., Hashimoto K., Yoshitake Y., Nishikawa K.,
Tanihara K., Date T.,
"CDNA cloning and chromosomal mapping of genes encoding novel prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryoca; Mecazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                           319 GOAPPATNEOKO----RKSKTN---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    like kinase 1) (PKU-beta).
TLK1 OR KIAA0137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   710 GASNNSSSN 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene 202:193-201(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       823 GESHNSSSS 831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Н------
321
                                                                                                                                                                                                                                                                                                                                                                                                                   441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT TERITHO
                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
```

```
A MEDLINE-22388257; PubMed=12477932;

A Klausher R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A Laushar R.D., Collins F.S., Wagner L., Shammen C.M., Schuler G.D.,

A Altschul S.F., Zeeberg B., Buerow K.H., Schaefer C.F., Bhat N.K.,

A Altschul S.F., Zeeberg B., Buerow K.H., Schaefer C.F., Bhat N.K.,

Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

A Altschul S.F., Zeeberg B.B., Bonaldo M.F., Carnhor D., Hong L.,

A Stapleton M., Soares M.B., Bonaldo M.F., Carnhor P., Prange C.,

Raha S.S., Loquellano N.A., Perers G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gubbs R.A.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Nilalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

A Hakesley X., Helton B., Ketreman M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

B. Manner D. M., Schein J.B., Jones S.J.M., Marra M.A.,

R. Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cabaniols J.-P., Ravichandran V., Roche P.A.; "Phosphorylation of SNAP-23 by the novel kinase SNAK regulates t-SNARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-22546651; PubMed=12660173;
Groth A., Lukas J., Nigg E.A., Sillje H.H.W., Wernstedt C., Bartek J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tousled like kinases are targeted by an ATM- and Chkl-dependent
                                                                                                                                                                                                                                                TISSUE=Bone marrow; MEDIMEd=8590280; MEDIME=86127530; PubMed=8590280; MEDIME=86127530; PubMed=8590280; Magase T., Seki N., Tanaka A., Ishikawa K.-I., Nomura N.; "Prediction of the coding sequences of unidentified human genes. IV. The coding sequences of 40 new genes (KIAA0121-XIAA0160) deduced by annalysis of cDNA clones from human cell line KG-I."; DNA Res. 2:167-174(1995).
                                                                    SEQUENCE FROM N.A. (ISOFORM 3), FUNCTION, SUBCELLULAR LOCATION, AND TISSUE SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MUTAGENESIS OF SER-743, PHOSPHORYLATION OF SER-743, AND
regulated kinases with maximal activities linked to ongoing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         t
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBUNIT: Heterodimerizes with TLK2.
SUBCELLULAR LOCATION: Nuclear. Isoform 3 appears
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cytoplasmic.
ALTERNATIVE PRODUCTS:
Event=Alternative splicing; Named isoforms=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Name=1;
IsoId=Q9UKI8-1; Sequence=Displayed;
                                                                                                                                                                                                 Mol. Biol. Cell 10:4033-4041(1999).
                                                                                                      TISSUE=Placenta;
MEDLINE=20056088; PubMed=10588641;
                                                                                                                                                                                                                                   SEQUENCE FROM N.A. (ISOFORM 1).
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. (ISOFORM 1).
                                  EMBO J. 18:5691-5702(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           segnences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENZYME REGULATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=Uterus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hansen K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           monse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION,
```

თ

```
132 SFAQFELS--QGNVKKSKQLLQKAVERGAVPLEMLEIALRNINLQKKQLLSEEEKKNLSA 189
                                                                                                                                                                                                                                    STVLT----SCDSRGQTTKARFLYG 227
                                                                                                                                                                                                                                                                ENMPPODABIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFMKRQTSR 287
                                                                                                                                                                                                                                                                                                                                                                  LVSDEK-SSELIITDSITLKNKTESSLLAKLEETK----EYQEPEVP--------364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : | | : | : | : | : | | : | | : | | : | | DEQOKLIEKYKERLNKCISMSKKLLIEKSTQEKLSSREKSMQDRLRLGHFTTVRHGASFT 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       389 NHW----QIPELARKVN-TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTL 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                314 EQWIDGFAFONLVKQOEWVNQOREDIERORKLLAKRKPPTANNS------QAPSTNSE 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DDYM-----SCFRTPVVKNDFPPACQLSTPYGQPACFQ-----QQQHQILATPLQNLQ 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 PKQRKNKAVNGAENDPFVRPNLPQLLTLAEYHEQEEIFKLRLGHLKKEEAEIQAELERLE 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   538 YVNLEEA-DNQTLDSYRNEIAYLNKLQQHSD--KIIRLYDYEI--TDQYIYMVMECGNID 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     606 TDFGLSKIMDDDSYGVDGMDLTSQGAGTYWYLPPECF-----VVGKEPPKISNKVDVW 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SLGCILYYMTYGKTPF-----QQIINQISKLHAIIDPNHEIEFPDIP--EKDLQDVLKC 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-OCT-2003 (Rel. 42, Created)
10-OCT-2003 (Rel. 42, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Serine/threonine-protein Kinase tousled-like I (EC 2.7.1.37) (Tousled-like kinase 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 IVQPKQLSFKIIQTDLTMLK-----LAALESNKIQDLEKKEGRIDDLLRANCDLRRQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                492 VLASSSANECISVK------GRIYSILKQIGSGGSSKVFQVLNEKKQIY-AIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IDFGIANQMQPDTTSV----VKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVW
                                                                                                                                                                             15 SWSQLSTSPIPGSAAAARSLINHTPPSGR-PREGAMDELHSLDPRRQELLEARFIGVASG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INSWLKKKKSIDPWERKSYWKNMLEAVHTIHQ--HGIVHSDLKPANFLIVDGM----LKL
                                                         Query Match 7.6%; Score 332; DB 1; Length 766; Best Local Similarity 21.3%; Pred. No. 8.9e-10; Matches 171; Conservative 124; Mismatches 268; Indels 238;
                                                                                                                                                                                                                                                                                                                                                                                                                288 SECRDLVVPGSKPSGNDSCELRN----LKSVQNSHF------
  N -> C (IN REF. 1).
A65AE0A2A7C7FF2F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       365 ESNQK--QWQAKRKSECIN------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          766 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       755 CLKRDPKQRISIPELLAHPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130 ONESSÓGKSİĞGRĞH-----
  730 N
86699 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
730 7
766 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TKL1 MOUSE
Q8COVO;
  CONFLICT
                                                                                                                                                                                                                                       190
                                                                                                                                                                                                                                                                                  74
                                                                                                                                                                                                                                                                                                                           228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TKL1_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
  F S
                                                                                                                                                                                           ద
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the FNBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                       IsoId=Q9UKI8-2; Sequence=VSP_050571;
Name=3; Synonyms=SNAK;
IsoId=Q9UKI8-3; Sequence=VSP_050570;
TISSUB SPECIFICITY: Widely expressed. Present in fetal placenta,
liver, kidney and pancreas but not heart or skeletal muscle. Also
found in adult cell lines. Isoform 3 is ubiquitously expressed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -> GFPNLPVFQSLAYWEMGRTAGG (in isoform
                                                                                                                             all tissues examined. SIMILARITY: Belongs to the Ser/Thr family of protein kinases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S->D: LOSS OF KINASE INHIBITION IN RESPONSE TO DNA DAMAGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D-AA: LOSS OF KINASE ACTIVITY.
S-AA: LOSS OF KINASE INHIBITION
RESPONSE TO DNA DAMAGE.
S-AE: LOSS OF KINASE INHIBITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Missing (in isoform 3). /FIId=VSP 050570.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TO DNA DAMAGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T (IN REF. 12 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN REF. 14 (IN 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FTId=VSP_050571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESPONSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4445
470
470
485
586
586
217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
2030
2030
444
441
6477
665
665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102
2330
261
4416
471
6625
665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MUTAGEN
MUTAGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MUTAGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MUTAGEN
```

```
Misseculus (Mouse).

Or Markaryora, Misseculus (Mouse).

Misseculus (Mouse).

Misseculus (Mouse).

Mammalia, Butheria a, Rodentia, Sciurognathi, Muridae, Murinae, Mus.

Or Mammalia, Butheria a, Rodentia, Sciurognathi, Muridae, Murinae, Mus.

R. Tissuga-Libb.

R. Klausner R.D., Colling F.S., Wagner L., Sheamen C.W., Schuler G.D.,

R. Klausner R.D., Colling F.S., Magner L., Sheamen C.W., Schuler G.D.,

R. Misseculus R.P., Jordan H., More T., Markar, Schaefer C.F., Blat R.K.,

R. Misseculus M.J., Ledgel H., More T., Markar, C.M., Markar, M., Markar, M.,

R. Misseculus M.J., Ledgel H., More T., Markar, M., Markar, M., Markar, M.,

R. Minseculus M.J., Ledgel H., More T., Markar, M., Markar, M., Markar, M.,

R. Minseculus M.J., Ledgel H., More T., Markar, M., Markar, M., Markar, M.,

R. Minseculus M.J., Ledgel H., More T., Markar, M., Markar, M.,

R. Minseculus M.J., Ledgel H., More T., Markar, M., Markar, M., Markar, M.,

R. Minseculus M.J., Ledgel H., More T., Markar, M., Markar, M., Markar, M.,

R. Minseculus M.J., Ledgel H., More T., Markar, M., Markar, M.,

R. Minseculus M.J., Markar, M., Markar, M., Markar, M., Markar, M.,

R. Minseculus M.J., Markar, M., Markar, M., Markar, M., Markar, M.,

R. Minseculus M., Markar, M., Markar, M., Markar, M., Markar, M.,

R. Markar, M., Markar, M., Markar, M., Markar, M., Markar, M.,

R. Markar, M., Markar, M., Markar, M., Markar, M., Markar, M.,

R. Markar, M., Markar, M., Markar, M., Markar, M., Markar, M.,

R. Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M., Markar, M
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R InterPro; IPR00021; Ser_thr_pkin_AS.
InterPro; IPR000271; Ser_thr_pkin_AS.
InterPro; IPR00220; Ser_thr_pkin_AS.
InterPro; IPR00220; Ser_thr_pkinase.
R InterPro; IPR001245; Tyr_pkinase.
R Pfam; PF00069; pkinase; 1.
R PRODIC; PROTICK kinase; 1.
R SMART; SM00210; PROTEIN KINASE ATP; 1.
R PROSITE; PS00107; PROTEIN KINASE DOW; 1.
R PROSITE; PS00101; PROTEIN KINASE DOW; 1.
R PROSITE; PS00108; PROTEIN KINASE DOW; 1.
R PROSITE; PS00109; PROTEIN KINASE DOW; 1.
R ATTANEFERSE; Cell cycle; DNA damage; Nuclear protein kinase; 3.
Transferse; Cell cycle; DNA damage; Nuclear protein; Coiled coil; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               85 AKASTNNESSNHSF-GSLGSLSDKESETPEKKQSESSRGRKRKAE---SQNESSQGKSIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141 GRGHKISDYFEYQGGNGSSPVRGIPPAIRSPQNSHSHSTPSSSVRPNSPSPTALAFGDHP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195 -----AQESFSGSLGHLQNRNN----SCDSRGQTTKARFLYGENMPPQDAEIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ------NSLRQTNKTKQSCPFGRVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----NLLNSPDCDV----KTDDSV-VPCFMKRQTSRSECRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
     (By
                                                                                                                                                                                                                                                                                                                                                                                            EMBL; BC051641; AAH51641.1; ALT INIT.

EMBL; AK029773; BAC26610.1; ALT_SEQ.

MCD; MC1.2441683; T1K1.

GO; GO:0005634; C:nucleus; ISS.

GO; GO:0005674; F:ATP binding; ISS.

GO; GO:0004674; F:protein serine/threonine kinase activity; ISS.

GO; GO:0007467; F:protein serine/threonine kinase activity; ISS.

GO; GO:0007467; F:protein amino acid phosphorylation; ISS.

GO; GO:0006468; P:protein amino acid phosphorylation; ISS.

GO; GO:0006468; P:protein amino acid phosphorylation; ISS.
appears to regulate processes involved in chromatin assembly (By similarity).
-!- CATALYTIC ACTIVITY: ATP + a protein = ADP + a phosphoprotein.
-!- CAPALYTIC MAGINESIUM (By similarity).
-!- ENZYME REGULATION: Cell-cycle regulated, maximal activity in S-phase. Inactivated by phosphorylation at Ser-743, potentially by CHK1 (By similarity).
-!- SUBUNIT: Heterodimerizes with TLK2 (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141 GNVKKSKOLLQKAVERGAVPLEMLEIALRNINLQKKOLLSEEBKKNLSASTVLT----
                                                                                                                                                                                                               -!- SIMILARITY: Belongs to the Ser/Thr family of protein kinases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               al Similarity 21.3%; Pred. No. 1.4e-09; 167; Conservative 124; Mismatches 269; Indels 224;
                                                                                                                                                                         -!- TISSUE SPECIFICITY: Ubiquitously expressed in all tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY.
PHOSPHORYLATION (BY SIMILARITY).
19634346118E6551 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 766;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COLLED COLL (POTENTIAL).
COLLED COLL (POTENTIAL).
PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                         -!- SUBCELLULAR LOCATION: Nuclear (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.5%; Score 328; DB 1;
21.3%; Pred. No. 1.4e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     280
CC
734
PR
470
AT
485
AT
743
BK
PW
PW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           456
462
485
485
586
743
766 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      239 YR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260 V-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACT SITE
MOD RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
NP BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
```

```
++++
    442
                                                                                                                                                                                                                                                                                                                                                                                  609
                                                                            394
                                                                                                                                                     454
                                                                                                                                                                                                                              505
                                                                                                                                                                                                                                                                                                         553
                                                                                                                                                                                                                                                                                                                             443 NSQFKDHPTLNERYLLLHLIGRGGFSEVYKAFDLYEQRYAAVKIHQLNKSWRDEKKENYH 502
                                                                                                                                                                                                                                                                                                                                                                                                        XHACREYRIHKELDHPRIVKLYDYFSLDTDTFCTVLEYCEGNDLDFYLKQHKLMSEKEAR 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                             662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----QQIINQISKLHAIIDPNHEIEFPDIP--EKDLQDVLKCCLKRDPKQRISIPELLA 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TDSITLKUKTESSLLAKLEETKEYQEPEVPESNQKOMQAKRKSECINQNPAASSNHWQIP
                                                                                                                                                                                                                                                                                                                                                                                NEIAYLNKLQQHSD--KIIRLYDYEI--TDQYIYMVMECGNIDLNSWLKKKKSIDPWERK
                                  KLLEKYKERLN-KCISMSKKLLIEKSTQEKLSSREKSMODRLRLGHFTTVRHGASFTEQW
                                                                                                 ELARKVNTEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPV
                                                                                                                                                                            VKNDFPPACQLSTPYGQPACFQ-----QQQHQILATPLQNLQVLASSSANECISVK---
                                                                                                                                                                                                                                                        -----GRIYSILKQIGSGGSSKVFQVLNEKKQIY-AIKYVNLEEA-DNQTLDSYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYWKNWLEAVHTIHQ--HGIVHSDLKPANFLIVDGM----LKLIDFGIANQMQPDTTSV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GMDLTSQGAGTYWYLPPECF-----VVGKEPPKISNKVDVWSVGVIFFQCLYGRKPFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---VKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lindsay H.D., Griffiths D.J.F., Edwards R.J., Christensen P.U., Murray J.M., Osman F., Walworth N., Carr A.M., Especific activation of Cds1 kinase defines a subpathway the checkpoint response in Schizosaccharomyces pombe.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kinase from fission yeast responsible for blocking mitosis in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS1_SCHPO STANDARD; PRT; 460 AA.
00170; 042642;
01-NOV-1995 (Rel. 32, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2003 (Rel. 42, Last annotation update)
Protein kinase cds1 (BC 2.7.1.37) (Checkpoint kinase cds1).
CDS1 OR SPCC18B5.11C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., FUNCTION, SUBUNIT, AND PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sukaryota, Fungi, Ascomycota, Schizosaccharomycetes,
Schizosaccharomycetales, Schizosaccharomycetaceae,
LVVPGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schizosaccharomyces pombe (Fission yeast)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A., AND FUNCTION. MEDLINE=95240713; Pubmed=7723827; Murakami H., Okayama H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=98119835; PubMed=9450932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genes Dev. 12:382-395(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phase.";
Nature 374:817-819(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Schizosaccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [3]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HPYV 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              731 DPYL 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=4896;
                                      258
                                                                                                             317
                                                                                                                                                 395
                                                                                                                                                                                                                            455
                                                                                                                                                                                                                                                                 383
                                                                                                                                                                                                                                                                                                                                                                                554
                                                                                                                                                                                                                                                                                                                                                                                                                      503
                                                                                                                                                                                                                                                                                                                                                                                                                                                         610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         772
                                                                        335
                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                       909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SCHPO
                                임
                                                                                                         g
                                                                                                                                               ò
                                                                                                                                                                                  셤
                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCOORDING THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF 
                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
```

```
Recording Display Publishers 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 18 and 1
```

```
SOLUTION TO SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                                                                   -INONPAASSNHWOIPELARKVNTEOKHTTFEOPVFSVSKOSPPISTSKWFDPKSICKTP 438
                                                                                                                                                                                                                                                                                                                                                           SSNTL----DDYMSCFRTPVVKNDFPPACQLSTPYGQPACFQQQQHQILATPLQNLQVLA 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    495 SSSANECISVKGRIYSILKQIGSGGSSKVFQVLNEKKQI----YAIKYVN----LEEA 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEODCKPLLKQLLETLLHLHKQGVTHRDIKPENILITNDFHLKISDFGLAKVIH--GTGT 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VKDSQVGTVNYMPPEAIKDMSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPF---- 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719 -QQIINQISKLHAIIDPNHEIEFPDIPEKDLQDVLKCCLKRDPKQRISIPELLAHP-YVQ 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              - DSQKNMIKSENSHYEIIRTLGSG----TFAVVKLAVEVNSGKWYAIKIINKRKILLTSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANFLIV-DGMLKLIDFGIANQMQPDTTSV
                                                                                                                                                                                                                                                                                         15 PLHVSQNIAKQVVNNENVFMK----LVMTRMLDGKTEVIPLTTDVHNGFWRFGRHKSCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325 FLETFCGTMGYLAPEVLKSKNVNLDGG-----YDDKVDIWSLGCVLYVMLTASIPFASSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  322 PL-VSDEKSSELIITDSITLKNKTESSLLAKLEETKEYQEPEVPESNQKQWQAKRKSEC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNOTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQYIYWVME-CGNIDLNSWLKKKKSI
                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=21848401; PubMed=11859360; Medline=21848401; PubMed=11859360; Medline M., Rajandream M.A., Lyne M., Lyne R., Stewart A., Sgouros J., Peat N., Hayles J., Baker S., Basham D., Bowman S., Brooks K., Brown D., Brown S., Chillingworth T., Churcher C.M., Brooks K., Connor R., Cronin A., Davis P., Fellewell T., Fraser A., Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G., Holroyd S., Hornsby T., Howarth S., Huckle E.J., Hunt S., Jagels K.,
                                                                                                                                                                                                          88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            119 NSRTILSNGDEIRIGLGVP--KDEISFLCQVPVKHSR------
                                                                                                                                                                  DB 1; Length 460;
                                                                                                                                                                                                          Indels
                                                                                                                           4CEB963D3376DB54 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sukaryota, Fungi, Ascomycota, Schizosaccharomycetes,
Schizosaccharomycetales, Schizosaccharomycetaceae,
PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                        196;
                                                                                 R -> G (IN REF. 1)
F -> C (IN REF. 1)
                                                                                                                                                                  7.5%; Score 327; DB 1; 24.4%; Pred. No. 8.6e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
SNF1-like protein kinase (EC 2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     576 AA.
                                                                                                                                                                                                          95; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schizosaccharomyces pombe (Fission yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : || : : | 436 VSTHEHRTPPSSSEHEATEQL 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         777 IQTH----PVNQMAKGTTEEM 793
  433 PR
181 AT
196 AT
294 BY
61 R
238 F
                                                                                                                                                                                      24.48;
                                                                                                                                                                                        al Similarity 24.4
122; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schizosaccharomyces
                                                                                                                           460 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPCC74.03C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                267 1
  DOMAIN
NP BIND
BINDING
ACT SITE
CONFLICT
                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                     380
                                                                                                                                                                                                                                                                                                                                                                                                                       439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         604
                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       074536;
                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
SNF1_SCHPO
                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SNF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEFFFFS
                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
```

```
James K., Jones L., Jones M., Leather S., McDonald S., McDean J.,
Mooney P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
Aliver K., O'Neil S., Pearson D., Quail M.A., Rabbinowitsch E.,
Rutherford K., Rutter S., Saunders D., Seeger K., Sharp S.,
Skelton J., Simmonds M., Squares R., Squares S., Stevens K.,
A Taylor K., Taylor K., Tavey A., Walsh S.V., Warren T., Whitehead S.,
Modward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
Meltjens I., Vanstreels E., Rieger M., Schaefer M., Mueller-Auer S.,
A Borzym K., Langer I., Beck A., Lehrach H., Reinhardt R., Pohl T.M.,
Berrym K., Langer I., Beck A., Lehrach H., Reinhardt R., Pohl T.M.,
Berrym K., Langer I., Drann S., Gloux S., Lelaure V., Mottier S.,
Gablert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
Lucas M., Rochet M., Gaillardin C., Tallada V.A., Garzon A., Thode G.,
Dominguez A., Revuelta J.L., Moreno S., Armstrong J., Benito J.,
A Dominguez A., Revuelta J.L., Moreno S., Armstrong J., Porsburg S.L.,
Shpakovski G.V., Ussery D., Barrell B.G., Nurse P.,
The genome sequence of Schizosaccharomyces pombe.";
Muture 415:871-880(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YSILKQIGSGGSSKVFQVLNEK-KQIYAIKYVN---LEEADNQTLDSYRNEIAYLNKLQQ 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         684 SSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQ--IINQISKLHALIDPNHEIEFP 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     625 HGIVHSDLKPANFLIVDGM-LKLIDFGLANQMQPDTTSVVKDSQVGTVNYMPPEAIKDMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34 YIIRETLGEGSFGKVKLATHYKTQQKVALKFISRQLLKKSDMHM--RVEREISYL-KLLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           565 HSDKIIRLYDYEITDQYIYMVMECGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1; Length 576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00069; pkinase; I.
ProDom; PD000001; Prot_kinase; I.
PROBAT; SM00220; STKc; I.
PROSITE; PS00107; PROTEIN_KINASE_ATP; I.
PROSITE; PS00108; PROTEIN_KINASE_DOM; I.
PROSITE; PS00109; PROTEIN_KINASE_ST; I.
PROSITE; PS00109; PROTEIN_KINASE_ST; I.
PROSITE; PS00109; DBA; I.
PROSITE; PS00109; PROTEIN_KINASE_ST; I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67; Mismatches 132; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y SIMILARITY.
E5857E8F171E7B50 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATP (BY SIMILARITY). ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.4%; Score 324.5; DB 1
29.3%; Pred. No. 1.5e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              subfamily.
-!- SIMILARITY: Contains 1 UBA domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; T41587; T41587.
HSSP; Q63460; 1A06.
GeneDB SPombe; SPC774.03c; -.
InterPro; IPR000719; Prot kinase.
InterPro; IPR00821; Ser thr pkin AS.
InterPro; IPR00821; Ser thr pkin as.
InterPro; IPR002290; Ser thr pkinase.
InterPro; IPR000449; UBA_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AL031543; CAA20833.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65996 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.4
3.4
6.3
6.3
6.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   156 1
576 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACT SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
NP BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
```

Thu

```
354
                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DOMAIN
NP BIND
BINDING
ACT SITE
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           756
                                                                                                                                                                                                                                                                                                                                                                                                                                                      MUTAGEN
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bicinformatics and the BNBL outstation the Buropean Bicinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                              ----NGKLYA--GPEVDVWSCGIVLYVMLVGRLPFDDEFIPNLFKKVNSCV-----YVMP 251
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., ALTERNATIVE SPLICING, AND MUTAGENESIS OF LYS-1371.
TISSUE=Fetal liver, and Skeletal muscle;
MEDLINE=97449143; PubMed=9305639;
                             742 DIPEKDLQDVLKCCLKRDPKQRISIPELLAHPYVQIQ----THPVNQMAKGTTEEMKYV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDITRE 97191544; PubMed=9039502;
Nagase T., Seki N., Ishikawa K.-I., Chira M., Kawarabayasi Y.,
Nagase T., Seki N., Ishikawa K.-I., Chira M., Kawarabayasi Y.,
Nagase T., Seki N., Ishikawa K.-I., Chira M., Kawarabayasi Y.,
Nagase T., Seki N., Ishikawa K.-I., Chira M., Kawarabayasi Y.,
"Pradiction of the coding sequences of unidentified human genes. VI.
The coding sequences of 80 new genes (KIAA0201-KIAA0280) deduced by DNA Res. 3:321-329[1996].
DNA Res. 3:321-329[1996].
-!-FUNCTION: ACTIVATES THE CSBP2, P38 AND UNK MAPK PATHWAYS, BUT NOT THE BRK PATHWAY. SPECIFICALLY PHOSPHORYLATES AND ACTIVATES MAPZKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ESSENTIAL DOMAIN FOR THE DOMINANT-INHIBITORY EFFECT. SIMILARITY: Belongs to the Ser/Thr family of protein kinases. MAP kinase kinase kinase subfamily.
                                                                                                                                                                                                 09Y6R4; 092612;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Mitogen-activated protein kinase kinase kinase 4 (EC 2.7.1.-)
(MAPK/BRK kinase kinase 4) (MEK kinase 4) (MEKK 4) (MAP three kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN: THE N-TERMINAL NON-CATALYTIC DOMAIN (1-606) CONTAINS AN
                                                                                                                                                                                                                                                                                                                                                                                                                                                      kinases,
                                                                                                                                                                                                                                                                                                                                     Euteleostomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ISOIG=09Y6R4-2; Sequence=VSP 004884;
TISSUE SPECIFICITY: EXPRESSED AT HIGH LEVELS IN HEART, PLA
SKELETAL MUSCLE AND PANCREAS, AND AT LOWER LEVELS IN OTHER
                                                                                       832
                                                                                                      Takekawa M., Posas F., Saito H., "A human homolog of the yeast Ssk2/Ssk22 MAP kinase kinase MTK1, mediates stress-induced activation of the p38 and JNK
                                                                                     ----NSILKAAKTLYEHYSGGESHNSSSK
                                                                                                                                                                                                                                                                                                                                  Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Butele
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. (ISOFORM B).
Ohara O., Nagase T., Kikuno R., Nomura N.;
Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Event=Alternative splicing; Named isoforms=2;
                                                                                                                                                                                                                                                                                                      MAP3K4 OR MAPKKK4 OR MEKK4 OR MTK1 OR KIAA0213.
                                                                                                                                                                                           Ź
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 68-1607 FROM N.A. (ISOFORM B).
                                                                                                                                                                                         1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IsoId=Q9Y6R4-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pathways.";
EMBO J. 16:4973-4982(1997).
                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALTERNATIVE PRODUCTS:
                                                                                    797 -LGQLVGLNSP----
                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Bone marrow;
                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                        HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Name=B
                                                        252
                                                                                                                                                          RESULT 11
M3K4_HUMAN
                                                                                                                                                                                        M3K4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -:-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     +
                           à
                                                     Dp
                                                                                    ò
                                                                                                              g
                                                                                                                                                                                                     셤
```

```
1206 PSGGDSV---LPKSISSAH-----DTRGSSVPENDRL-----ASIAAELQFRSLSR 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1340 ------FKWQRG-------RKWORG-1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            641 DGMLKLIDFGIANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSKISPK 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---ETKEYQEPEVPE----SNQKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1249 HSSPTEERDEPAYPRGDSSGSTRRSWELR---TLISOSKDTASKLGPIEALOKSVR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1302 --IFFEEKRYREMRKONIIG------OVCDTPKS--YDNVMHVGLRKVT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       466 STPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSSKVFQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          526 VLN-EKKQIYAIKYVNLEBADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYBITDQYIYM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           585 VME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPAN-FLIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              699 SDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK----DLQDVLKCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             406 HTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPPACQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300 PSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1; Length 1607;
                                                                                                                                                                                                                                                                                                                        Pfam; PF00069; prinase; 1.
ProDom; PD00001; Prot_kinase; 1.
SNART; SM00220; S TKC; 1.
PROSITE; PS00107; PROTEIN KINASE ATP; 1.
PROSITE; PS00108; PROTEIN KINASE ST; 1.
PROSITE; PS50011; PROTEIN KINASE DOM; 1.
Transferase; Serine/threonine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

BY SIMILARITY.

Missing (in isoform B).

FTIG+VSP 004884.

K-N: LOSS OF ACTIVITY.

I -> R (IN REF. 2).

MW; 24BC4597730B5287 CRC64;
                                                                                                                                                        kinase activity; TAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7.3%; Score 318.5; DB 1;
23.0%; Pred. No. 1.1e-08;
iive 98; Mismatches 161;
EMBL; AF002715; AAB68804.1; -.
EMBL; D86968; BAA13204.2; ALT_INIT.
PIR; T03022; T03022.
HSSP; P24941; HGC.
Genew; HGNC:6856; MAP3K4.
MIM; 602425; -.
GO; GO:0004709; F:MAP kinase kinase kinase act
GO; GO:0000186; P:activation of MAPKK; TAS.
GO; GO:0000186; P:activation of MAPKK; TAS.
GO; GO:0000289; P:MSP kinase to stress; TAS.
InterPro; IPR000719; Prot_kinase.
InterPro; IPR008271; Ser_thr_pkin AS.
InterPro; IPR00820290; Ser_thr_pkinase.
Fram; PF00069; pkinase; It._pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLY-ALA.
POLY-PRO.
POLY-ALA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LKRDPKQRISIPELLAHPYVQIQT 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               791 791
1607 AA; 181550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.3%
Best Local Similarity 23.0%
Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alternative splicing.
DOMAIN 25 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1462
1175
```

```
159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
    Conservative
    176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
WIS4 SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WIS4
    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GERTARD
                                                                                                                                       à
                                                                                                                                                                                  g
                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDINE 51201 NZ; PubMed=7906398; MEDINE 5120718; PubMed=7906398; MEDINE 59150718; Adderson K., Baynes C., Berks M., Wilson R., Anderson K., Conell M., Copsey T., Cooper J., Coulson A., Caraxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A., Fulton L., Gardner A., Green P., Hawkins T., Hiller L., Jier M., Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N., Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M., Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownken R., Sulston J., Thierry Mieg J., Thomas K., Vaudin M., Vaughan K., Wateston R., Wateston R., Wateston R., Wateston R., Wateston R., Wateston R., Waldin M., Vaughan K.,
                                                                                                                                                                                                                                                                                                                         Eukaryota, Metazoa, Nematoda, Chromadorea, Rhabditida, Rhabditoidea,
Rhabditidae, Peloderinae, Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRODEST, PRODEST, PRODEST, I. PRODEST, PRODEST, PRODEST, PRODEST, PRODEST, PRODEST, PROPERTY, I. PROSITE; PS00107; PROTEIN KINASE ATP; 1. PROSITE; PS00109; PROTEIN KINASE ATP; 1. PROSITE; PS00111; PROTEIN KINASE ST; 1. Hypothetical protein; Transferase; Serine/threonine-protein kinase; ATP-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ပ
                                                                                                                        YKT3 CAEEL STANDARD; PRT; 1231 AA.
914314; P34323;
01-FEB-1994 (Rel. 28, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2011 (11, Last annotation update)
Putative serine/threonine-protein kinase C07A9.3 in chromosome III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "2.2 Mb of contiguous nucleotide sequence from chromosome III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97C3204FAD90D95D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GLN-RICH.
PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 309; DB 1;
Pred. No. 2.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL, Z29094, CAA82347.2; -.
PIR, S40704, S40704.
PIR, S40712; S40712.
WormPep, C7A9.3; CE20487.
InterPro; IPR000719, Prot kinase.
InterPro; IPR008271; Ser thr pkin AS.
InterPro; IPR008279; Ser thr pkin AS.
Pfam. PR0069.
         1581 LESDPKMRWTASQLLDHSFVKVCT 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        139865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            496
1199
936
951
1052
                                                                                                                                                                                                                                                                                                      Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             À.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-Bristol N2;
                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                 .1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wohldman P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Durbin R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REVISIONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACT SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      elegans.'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NP_BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                     C07A9.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                          STATE TELEVISION NEW YORK OF COURT AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE AND STATE A
            엄
```

```
39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               682 MSSSRENGKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQ--ISKLHAIIDPNHEIE 739
                                                                                                                                                                                                           587 TEYHQNGSSPKRQ---PAVQQNGSNSYDSQQQQPQMNQHEMQNSYWGVATPSLGVNNRGT 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EITDQYIY-MVMEC--GNIDLINSWLKKKKSIDPWERKSYWKNMLBAVHTIHQHG--IVHS 630
                                                                                                                                                                                                                                                                                     163 MLEIALRNINIQKKQLLSEEEKKNI-SASTVLTAQESFSGSLGHLQNRNNSCDSRGQTTK 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          644 PTPTQQQHYSSDSNSNSNQSPPGQGNQSGRMVRT--IDEETQTDSSLSQANPQNADEVAK 701
                                                                                                    SO SSPTEMOOCOOPAMSEDSIEMRD------YNSGVHHWHPHQMQMQQQQHHQQQVNMS
                                                                                                                                                                                                                                                                                                                                                                                                                                       ------KEPLVSDEKSSELIITDSITLKNKTESSL------LAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           702 MWRIIBDHRRQIBBLNSKNSLBRRKNBASKETIKRLLIDKNQIBRKALRDKTÄADSPRIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   820 RPQAVNSQNDSNGMQPSTSSNTNGD-DAIFRRPEEPKEIQYQEYIELDEIYKLRREHLRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     222 ARFLYGENMPPQDAEIGYRNSLRQTNKTKQSCPFGRVPVNLLNSPDCDVKTDDSVVPCFM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---CINQNPAASS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        762 CFKTTRTGDSFRDQWVDGWAFAEMDKKTEQINAERNEIASASAL--LKKRKPLGIGKEPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          879 EETDLSMEKERLEKEKOHHV----RELKRASNESASOFNDHRLLHKRYLMLNLLGKGGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SKVFQVLNEKKQIYA---IKYVNLEEADNQTLDSYRNEIAY--LNKLQQHSDKIIRLYDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DLKPANFLI----VDGMLKLIDFGIANOMOPDT----TSVVKDSQ-VGTVNYMPPBAIKD
                                                      44 NNPEDWLSLLLKLEKNSVPLSDALLNKLIGRYSQAIEALPPDKYGONESFARIQVRF-AE
                                                                                                                                                                          103 LKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNVKKSKQLLQKAVERGAVPLE
                                                                                                                                                                                                                                                                                                                                           496 OSSAALOHVN-----ESSNLSSAGSISDREPEQHGGTPORPTAPOSSTATDKKTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     422 -PISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKND--FPPACQLSTPY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----GQPACFQQQQHQILATPLQNLQVLASSSANECIS--VKGRIYSILKQIGSGGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              014299; P87062; Q92384;
16-0CT-2001 (Rel. 40, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
MAP Kinase Kinase wise (EC 2.7.1.-) (MAP kinase kinase kinase wak1) (MAP kinase kinase kinase wik1).
MIS4 OR WAK1 OR WIK1 OR SPAC9G1.02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----HHWOIPELARK---VNTEQKHTTFEQPVFSVSKQSP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282 K--RQTSRSECRDLVVPGSKPSGNDSCELR-----NLKSVQNSHF----
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     740 PPDIPE--KDLQDVLKCCLKRDPKQRISIPELLAH 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LEETKEYQEPEVPESNOKOWQAKRKSE------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1401 AA
      Mismatches
```

Page

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                        RK STRAIN=2784401; PubMed=11859360;
RA MEDLINE=21844401; PubMed=11859360;
RA Wood V., Gwilliam R., Rajandream M.A., Lyne M., Lyne R., Stewart A.,
RA Squrvos J., Peat N., Hayles J., Baker S., Basham D. Bowman S.,
RA Brooks K., Brown D., Brown S., Chillingworth T., Churcher C.M.,
RA Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G.,
RA Gentles S., Hornes M., Leather S., McDonald S., McLean J.,
RA Money P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Money P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Money P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Oliver K., O'Nell S., Pearson D., Quail M.A., Rabbinowitsch E.,
RA Rutherford K., Rutter S., Saudares R., Squares S., Stevens K.,
RA Taylor K., Taylor K.G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Taylor K., Taylor R.G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Woodward J., Volckaert G., Ackler R., Robben J., Grymonprez B.,
RA Goble C., Fuchs M., Fritzc C., Holzer E., Moestl D., Hilbert H.,
RA BOTZUM K., Langer I., Beck A., Lehrach H., Reinhardt R., Pohl T.M.,
RA Galibert F., Aves S.J. Xiang Z., Hunt C., More K., Hurst S.M.
A Galibert F., Aves S.J. Xiang Z., Munterowal J., Rorbert S.M.,
RA Borz A., Revuelta J.L., Moreno S., Armstrong J., Foreburg S.L.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez J., Sanchez M., del Rey F., Benito J.,
RA Borzwa R.R., Cruzado L., Jimenez M.R., Bulsen I., Potrabhin J.,
R. The genome sequence of Schizosaccharomyces pombe.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=98026892; PubMed=9321395;
Samejima I., Mackie S., Fantes P.A.;
Whltiple modes of activation of the stress-responsive MAP kinase
pathway in fission yeast.";
EMBO J. 16:6162-6170(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The Most response regulator coordinately controls the stress-activated Wakl-Wis1-Styl MAP kinase pathway and fission yeast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shieh J.C., Wilkinson M., Buck V., Morgan B., Makino K., Millar J.B.A.;
                Eukaryota, Fungi, Ascomycota, Schizosaccharomycetes, Schizosaccharomycetales, Schizosaccharomycetaceae,
 pombe (Fission yeast)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=972;
MEDLINE=97282620; PubMed=9136929;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genes Dev. 11:1008-1022(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 96-1401 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 457-543 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature 415:871-880(2002).
                                              Schizosaccharomyces.
Schizosaccharomyces
                                                                           [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                           NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cycle.";
```

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bicinformatics and the EMBL outstation-the Buropean Bicinformatics Institute. There are no restrictions on its use by non-profit institutions and a its content is in no way modified and this statement is not removed. Usage by and for commercial

```
983 LLOKETMLRIDELEIERNNTLLE-----RLAIGHVLDD--SVFR----NRDF-- 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1050 DVYTGVNMETGDLLAVKEIKLODSRTFRSTVDOIHNEMTVLERL--NHPNVVTYYGVEVH 1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1275 ISSLARDFIEQCFERDPEQRPRAVDLLTHPWITDFRKKTIITMPPATITKKTSLSHTITE 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      344 --TESSILAKLEETKEYQEPEVPESNQKQWQAKRKSECINQNPAASSNHWQIPELARKVN 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               945 LGAKSKVAAKLO-------RESTEVSSSPRLTS-FGDVEEBALSIO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      402 TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 522 KVFQVLN-EKKQIYAIKYVNLEEAD--NQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          579 DOYIYMVME-CGNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPANF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  638 LIVD-GMLKLIDFGIANQMQPDTTSVVKDSQV------GTVNYMPPEAIKDMSSSREN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1168 LLDHRGMIKYSDFGSALYVSPPTDPEVRYEDIQPELQHLAGTPMYMAPEIIL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GKSKSKISPKSDVWSLGCILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEKD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             748 ----LQDVLKCCLKRDPKQRISIPELLAHPYV-----QIQTHPVNQMAKGTT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Score 304.5; DB 1; Length 1401;
; Pred. No. 4.5e-08;
86; Mismatches 199; Indels 171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;

( Pfan; PF00069; pkinase; 1.)

( Pfan; PF00069; pkinase; 1.)

( P RODOM; PF00109; TYRKINASE.

( PR PROSTIT; PF00109; TYRKINASE.

( PROSTIT; PF00107; PF0TEIN KINASE ATP; FALSE NEG.

( PROSTIT; PF00107; PF0TEIN KINASE ATP; FALSE NEG.

( PROSTIT; PF00108; PF0TEIN KINASE DOM; 1.)

( PROSTIT; PF00108; PF0TEIN KINASE DOM; 1.)

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine/threonine-protein kinase; ATP-binding.

( Transferase; Serine-threonine-protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304 DSCELRNLKS----VQNSHFKEPLVSDEKSSELIITDSITLKNK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51 BY SIMILARITY.

55 RL -> SP (IN REF. 3).

66 D -> V (IN REF. 1).

160537 MW, 529A989DZB627F3D C
                                                                                                                                                                                                                                                                                                                                                                                                                                           Genebb_Sponde; SPAC9G1.02; -. Genebb_Sponde; SPAC9G1.02; -. GO; GO:0007049; P:cell cycle; ISS. GO; GO:0007165; P:MAPKUK cascade; ISS. GO; GO:0007165; P:signal transduction; ISS. InterPro; IPR000719; Prot kinase. InterPro; IPR008271; Ser_thr_pkin_AS. InterPro; IPR008290; Ser_thr_pkin_AS. InterPro; IPR001245; Tyr_pkinase.
entities requires a license agreement (Se
or send an email to license@isb-sib.ch).
                                                                                                 EMBL; 298763; CAB11500.1; -... EMBL; Y07750; CAA68030.1; ALT_INIT. EMBL; Y11989; CAA72718.1; -... EMBL; UBIS21; AAB39762.1; -... PIR; T39225; T39225. HSSP; P24941; 1CKP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 129; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
```

```
296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             522
                                                                                                                                ACT SITE
VARSPLIC
                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                 1292
                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                           Query Match
                                                                                          DOMAIN
NP BIND
BINDING
                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
RCK1 YEAST
                                                                                                                                                                                                                                                      Matches
ò
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ISOUGE648-2; Sequence=VSP 004885;
TISSUE SPECIFICITY: WIDELY EXPRESSED. HIGH EXPRESSION WAS FOUND IN
SKELETAL MUSCLE, KIDNEY, TESTIS FOLLOWED BY HEART BRAIN AND LUNG.
LOW EXPRESSION WAS FOUND IN SPIEEN.
SIMILARITY: Belongs to the Ser/Thr family of protein kinases. MAP
kinase kinase subfamily.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Igf2r gene.";
Genomics 43:285-297(1997).
-!- PUNCTION: ACTIVATES THE CSBP2, P38 AND UNK MAPK PATHWAYS, BUT NOT
-!- PUNCTION: ACTIVATES THE CSBP2, P38 AND UNK MAPK PATHWAYS, BUT NOT
THE ERK PATHWAY: SPECIFICALLY PHOSPHORYLATES AND ACTIVATES MAP2K4.
-!- SUBCELLULAR LOCATION: LOCALIZED IN PERINUCLEAR VESICULAR-LIKE
STRUCTURES, PROBABLY GOLGI-ASSOCIATED VESICLES.
                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-97236778; PubMed-9079650; Gerwins P., Blank J.L., Johnson G.L., Gerwins P., Blank J.L., Johnson G.L., "Cloning of a novel mitogen-activated protein kinase kinase, MEXK4, that selectively regulates the c-uun amino terminal kinase
                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                      008649; 008649; 070124;
30-MXX-2000 (Rel. 39, Created)
30-MXY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last amotation update)
Mitogen-activated protein kinase kinase kinase 4 (EC 2.7.1.-)
(MAPK/ERK kinase kinase 4) (MEK kinase 4)
                          1335 EKTAQLLAGRHDDSKAETDSLAASYKEESALPVASNVGLRQPNEL 1379
 --EEMKYVLGQLVGLNSPNSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Event=Alternative splicing; Named isoforms=2;
                                                                                           1597 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IsoId=008648-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MGD; MGI:346875; Map3k4.
InterPro; IPR000719; Prot kinase.
InterPro; IPR008271; Ser_Ehr pkin AS.
InterPro; IPR002290; Ser_thr_pkinase.
Fam: PF00069; Pkinase; I.
                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. (ISOFORMS A AND B)
                                                                                                                                                                                                                                                                                                                                                 pathway.";
J. Biol. Chem. 272:8288-8295(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam, PF00069; pkinase; I.
ProDom; PD000001; Prot_kinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL, U85607, AAC53126.1; -.
EMBL, U85608, AAC53127.1; -.
EMBL, U66240; AAC08286.1; -.
HSSP, P24941; IHCL.
                                                                                                                                                                                                     Mus musculus (Mouse)
                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                  rissue=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=A
                                                                                               M3K4 MOUSE
    791
                                                                                              g
```

```
1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------NKIGEGOYG 1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1194 PG--PGGGDSVPAKPVNT-----APDTRGSSVPENDRL-----ASIAAELQFR 1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FLIVDGMLKLIDFGLANQMQPDTTSVVKD--SQVGTVNYMPPEAIKDMSSSRENGKSKSK 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             695 ISPKSDVWSLGGILYYMTYGKTPFQQIINQISKLHAIIDPNHEIEFPDIPEK---DLQDV 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354 -----ETKEYQEPEVPESN----QKQWQAKRKSECINQNPAASSNHWQIPELARKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1235 SLSRHSSPTEERDEPAYPRSDSSGSTRRSWELR---TLISQTKDSASKQGPIEAIQKSVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              402 TEQKHTTFEQPVFSVSKQSPPISTSKWFDPKSICKTPSSNTLDDYMSCFRTPVVKNDFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----DFEERRYREMRRKNIIG------OVCDTPKS--YDNVMHVGLRKVT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KVFQVLN-EKKQIYAIKYVNLEEADNQTLDSYRNEIAYLNKLQQHSDKIIRLYDYEITDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PGSKPSGNDSCELRNLKSVQNSHPKEPLVSDEKSSELIITDSITLKNKTESSLLAKLE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                581 YIYMVME-C--GNIDLNSWLKKKKSIDPWERKSYWKNMLEAVHTIHQHGIVHSDLKPAN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BCK1 YEAST

AC Q01369; P32894;

AC Q01379; P32894;

DT 01-OCT-1993 (Rel. 27, Created)

DT 01-OCT-1993 (Rel. 27, Last sequence update)

DT 01-OCT-1993 (Rel. 37, Last sequence update)

DT 30-MAY-2000 (Rel. 39, Last annotation update)

DT 30-MAY-2000 (Rel. 39, Last annotation update)

BCK1 OK SIMI OK SEP31 OR LAS3 OR VIL095W OR U0906.

OS Saccharowyces cerevisiae (Baker's yeast).

OC Bukaryota; Fungi; Ascomycota; Saccharowycotina; Saccharowycetes;

OC Sacharomycetales; Saccharowycetaces; Saccharowyces.

ON NCB1 TaxID=4932;

RN [1].

RP SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Pred. No. 6e-08;
99; Mismatches 165; Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 303.5; DB 1; Length 1597;
Pred. No. 6e-08;
SMART, SM00220; S_TKC, 1.
PROSITE; PS00107; PROTEIN KINASE ATP, 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                  473 473 T_-> A (IN REF. 2).
1597 AA; 179948 MW; E84AEAAE92D103A4 CRC64;
                                                                                                                                                                                                                                                                                â
                                                                                                                                                                               PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                           Missing (in isoform /FIId=VSP 004885.
SL -> NS (IN REF. 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1567 LSHCLESDPKIRWTASQLLDHAFVKVCT 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LKCCLKRDPKQRISIPELLAHPYVQIQT 779
                                                                                                                                                     POLY-ALA
                                                                                                                                                                                                                                                                                                                                                                                                                                 6.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           22.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           al Similarity 22.2
113; Conservative
                                                                                                                                                                                                                                                                                                                                  364
473
                                                                                                                             Alternative splicing
DOMAIN 1178 118
                                                                                                                                                                                                       1338
1361
1452
1162
                                                                                                                                                                                                                                                                                                                                  363
```

Thu Sep

```
SECUENCE OF 602-1104 FROM N.A.

Cusick M.E.;

Submitted (XXX-1992) to the EMBL/GenBank/DDBJ databases.

-!- FUNCTION: Serine/threonine protein kinase involved in a signal transduction pathway that play a role in yeast cell morphogenesis and cell growth. This pathway seems to starts by SMP3; then involve the kinase PKCI that may act on this kinase. BCKI probably phosphorylates MKKI and MKKZ which themselves phosphorylate the MPXI kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MPK1 kinase.
SUBCELLUIAR LOCATION: Cytoplasmic (Potential).
SIMILARITY: Belongs to the Ser/Thr family of protein kinases. MAP
kinase kinase kinase subfamily.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lee K.S., Levin D.B.;
"Dominant mutations in a gene encoding a putative protein kinase
(BCK1) bypass the requirement for a Saccharomyces cerevisiae protein
kinase C homolog.";
MEDLINE=92186847; PubMed=1545797;
Costigan C., Gehrung S., Snyder M.;
A synthetic lethal screen identifies SLKI, a novel protein kinase homolog implicated in yeast cell morphogenesis and cell growth.";
Mol. Cell. Biol. 12:1162-1178 (1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Sequence and function analysis of a 9.74 kb fragment of Saccharomyces cerevisiae chromosome X including the BCK1 gene.";
                                                                                                                                                          [2]
SEQUENCE FROM N.A.
MEDLINE-92104496; PubMed=1840547;
Irie K., Araki H., Oshima Y.;
"A new protein kinase, SSP31, modulating the SMP3 gene-product involved in plasmid maintenance in Saccharomyces cerevisiae.";
Gene 108:139-144(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Miosga T., Boles E., Schaaff-Gerstenschlaeger I., Schmitt
Zimmermann F.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL, M84389; -; NOT ANNOTATED CDS.
EMBL, D10389; BAA01226.1; -
EMBL, X60237; CAA42788.1; -
EMBL, X77923; CAA4288.1; -
EMBL, X77923; CAA48896.1, -
EMBL, Z49370; CAA6389.1; -
EMBL, Z49369; CAA69388.1; -
EMBL, M88604; AAA21179.1; -
FIR, S20117; S20117.
HSSP, P24941; 1CKP.
GermOnline; 141709; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=S288c;
MEDLINE=95176706; PubMed=7871887;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=EG123;
MEDLINE=92107166; PubMed=1729597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mol. Cell. Biol. 12:172-182(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yeast 10:1481-1488(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                        FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
      RANGE BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT BERREIT
```

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation. The European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb.sib.ch). SGERMUNIATE, 1-7.0.7.

SGERMUNIATE, 1-7.0.7.

SGERMUNIATION THE STATE ST

```
34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |: || |: :: | | |- ---srpvPpdssyeFiQdglngknkPlnyakTpkRtkTirtiaheaslar----knsvkl 1137
                                                                                                                                                                                                                                                                                                                         T -> P (IN BCKL-19; ACTIVATION).

I -> F (IN BCKL-11; ACTIVATION).

I -> F (IN BCKL-11; ACTIVATION).

G -> V (IN BCKL-10; ACTIVATION).

G -> V (IN BCKL-10; ACTIVATION).

F -> P (IN BCKL-20; ACTIVATION).

F -> P (IN BCKL-20; ACTIVATION).

F -> V (IN REF. 3).

E -> V (IN REF. 3).

N -> I (IN REF. 3).

N -> P (IN REF. 3).

N -> I (IN REF. 3).

N -> I (IN REF. 3).

N -> I (IN REF. 3).

N -> I (IN REF. 3).

T -> N (IN REF. 3).

I -> V (IN REF. 3).

T -> N (IN REF. 3).

T -> N (IN REF. 3).

T -> N (IN REF. 3).

T -> N (IN REF. 3).

H (IN REF. 3).

ADA -> RDR (IN REF. 3).

ADA -> RDR (IN REF. 5).

RUPPDDSSYERIQUELTVKIN

H (IN REF. 5).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             984 SKKKTAPE-----TINENKKDEKSDNSSTH---SDEIFYDSQTQD----KMERK 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        790 NHRRESPYTKPELAPKREAPKP-PANTSPORTLSTSKONKPIRLVRASTKISRS--KRSK 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        847 PLPPQLLSSPIEASSSSPDSLTSSYTPASTHVLIPQPYKGANDVMRRLKTDQDSTSTSPS 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSEEEKKWLSASTVLTAQESFSGSLGHLONRNNSCDSRGQTTKARFLYGENMPPQDAEIG 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239 YRNSLRQTNKTKQSCPFGRVPVNLLNSP---DCDVKTDDSVVPCFMKRQTSRSECRDLVV 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --NSKRVVSSTSAADIFEENDITFADAPPMFDSDDSDDDS------SSSDDIIW 983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        296 PGSKPSGNDSCELRNLKSVQNSHFKEPLVSDEKSSELIITDSITLKNKTESSLLAKLEET 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356 KEYQ-EPEVPESN-QKQWQAKRKSECINQNPAASSNHWQIPELARKVNTEQKHTTFEQPV 413
                    SMART; SM00220; S_TKC; 1.
PROSITE; PS0107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS01010; PROTEIN_KINASE_ST; 1.
PROSITE; PS50111; PROTEIN_KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase; Tyrosine-protein kinase; ATP-binding; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 IDELSINKISADTTD----NSGTVNQI------MMMANNPEDWLSL-----LLKLEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               738 NA------PKMVFKTSPKLELNLPDKGSKLNIPTPITENESKSSFQVLRKDEGTEIDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------RFAELKAIQEPDDARDYFQMARANCKKFAFVHISFAQFELSQGNVKKSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             462 ACQLSTPYGQPACFQQQQHQILATPLQNLQVLASSSANECISVKGRIYSILKQIGSGGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----QLLQKAVERGA---------------VPLEMLEIALRNINLQKKQL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               414 FSVSKQSPPISTSKWFD-----PKSICKTP----SSNTLDDYMSCFRTPVVKNDFPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     907 LKMKQKVNRSNSTVSTSNSIFYSPSPLLK-----RG-----RG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1026 MTFRPSPEVVYQNLEKPFPRANLDKPITEGIASPTSPKSLDSLLSPKNVASSRTEPSTP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185; Conservative 131; Mismatches 338; Indels 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; DB 1; Length 1478; 9.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59 NSVPLSDALLNKLIGRYSQAIEALPPDK------YGONESFARIQV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (IN REF. 5).
D586C3A497A5BB33 CRC64;
                                                                                                                                                                                                                                                                                                          PHOSPHORYLATION (BY
                                                                                                                                                                                                                    ATP (BY SIMILA
ATP (BY SIMILA
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1478 AA; 164194 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21.2%;
                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                       DOWAIN

WP BIND

BINDING

ACT SITE

MOD RES

VORIANT

VARIANT

VARIANT

VARIANT

VARIANT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLICT

CONFLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
```

Search completed: September 29, 2004, 16:16:46 Job time : 32 secs